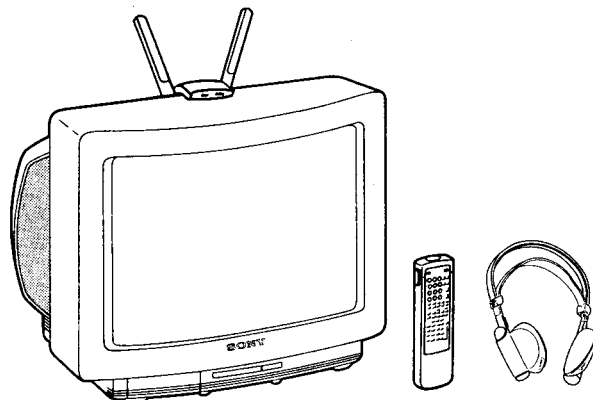


# KV-H2511D

## MDR-IF310/RM-816

### SERVICE MANUAL

*AEP Model*  
Chassis No. SCC-F07D-A



## AE-1C CHASSIS

#### MODELS OF THE SAME SERIES

KV-H2511D	KV-H2513E
KV-H2511A	KV-H2512U
KV-H2510B	

#### SPECIFICATIONS

##### 【KV-H2511D】

Television system  
Color system  
Stereo system  
Channel coverage

B/G/H  
PAL, SECAM, NTSC3.58, NTSC4.43  
GERMAN stereo  
B/G/H  
VHF: E2-E12 UHF: E21-E69  
CABLE TV (1) : S1-S41  
CABLE TV (2) : S01-S05, M1-M10, U1-U10  
Hi-Black Trinitron tube  
Approx. 63.5 cm (25 inches)  
(Approx. 59 cm picture measured diagonally)  
110°-degree deflection  
⊖ 1 21-pin connector:  
CENELEC standard including RGB input.  
⊖ 2 21-pin connector:  
including S video input  
Flont : ⊖ 3 Audio and video input jacks:  
phono jack.  
Including S Video input  
Y: 1Vp-p±3dB 75ohm  
C: 0.3Vp-p±3dB 75ohm

##### Outputs

Sound output  
Power consumption  
Dimensions incl. speakers  
Weight incl. speakers  
Supplied accessories

21-pin connector: CENELEC standard  
Headphones jack: stereo minijack  
External speaker terminals: 2-pin DIN  
Audio output jacks: phono jack  
(output dependent upon TV settings)  
30 W + 30 W  
104 Wh  
Approx. 575×510×487 mm (w/h/d)  
Approx. 36kg  
MDR-IF310 Headphones, IEC designation R6 batteries.

##### Picture tube

##### Inputs

-Continued on next page-



TRINITRON® COLOR TV  
**SONY®**

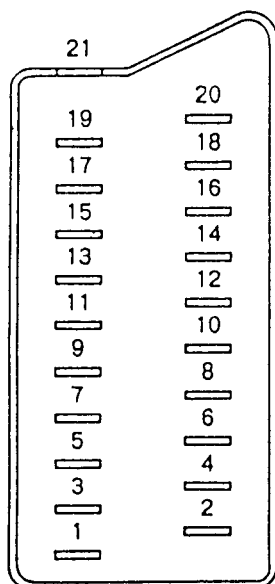
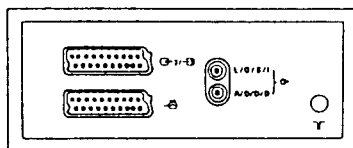


**【RM-816】**

Remote control system infrared control  
Power requirements 3V dc  
2 batteries IEC designation R6 (size AA)  
Dimensions Approx.75×221×23mm (w/h/d)  
Weight Approx.230g (including Batteries)

Design and specifications are subject to change without notice.

21 pin connector (—, —, —)



Pin No.	1	2	Signal	Signal level
1	○	○	Audio output B (right)	Standard level: 0.5Vrms Output Impedance: Less than 1kohm*
2	○	○	Audio Input B (right)	Standard level: 0.5Vrms Input Impedance: More than 10kohms*
3	○	○	Audio output A (left)	Standard level: 0.5Vrms Output Impedance: Less than 1kohm*
4	○	○	Ground (audio)	
5	○	○	Ground (blue)	
6	○	○	Audio Input A (left)	Standard level: 0.5Vrms Input Impedance: More than 10kohms*
7	○	●	Blue Input	0.7V ± 3dB, 75ohms, positive
8	○	○	Function select (AV control)	High state (9.5 – 12V): Part mode Low state (0 – 2V): TV mode Input Impedance: More than 10kohms Input capacitance: Less than 2 nF
9	○	○	Ground (green)	
10	○	○	Open	
11	○	●	Green	Green signal: 0.7V ± 3dB, 75ohms, positive
12	○	○	Open	
13	○	○	Ground (red)	
14	○	○	Ground (blanking)	
15	○	○	Red Input	0.7V ± 3dB, 75ohms, positive
	○	○	(S signal) chroma Input	0.3V ± 3dB, 75ohms, positive
16	○	●	Blanking Input (Ys signal)	High state (1 – 3V) Low state (0 – 0.4V) Input Impedance: 75ohms
17	○	○	Ground (video output)	
18	○	○	Ground (video Input)	
19	○	○	Video output	1V ± 3dB, 75ohms, positive Sync: 0.3V (– 3, +10dB)
	○	○	Video Input	1V ± 3dB, 75ohms, positive Sync: 0.3V (– 3, +10dB)
20	○	○	Video Input/Y (S signal)	1V ± 3dB, 75ohms, positive Sync: 0.3V (– 3, +10dB)
21	○	○	Common ground (plug, shield)	

○ connected ● unconnected (open)

\* at 20Hz – 20kHz

4 Pin Connector (—)

Pin No	Signal	Signal level
1	Ground	
2	Ground	
3	Y (S signal) input	1V ± 3dB 75ohm, positive Sync 0.3V <sub>r10</sub> dB
4	C (S signal) input	0.3V ± 3dB 75ohm, positive



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## SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK  $\Delta$  ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

## CAUTION

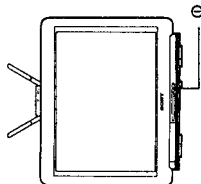
SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR CARBON PAINTED ON THE CRT, AFTER REMOVING THE ANODE.



# SECTION 1 GENERAL

## 1-1. SWITCHING ON/OFF

After you have completed the basic preparation your TV is ready to be connected to the mains power supply (220/240V AC, 50Hz).

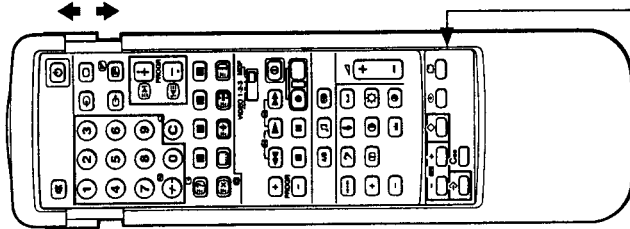


### How to turn the TV on

Action	Result
Press ❶ on the TV.	The TV will turn on. <b>Note:</b> If the screen remains blank, the TV may be in the standby mode. Press ❶ or any number button on the commander to switch it on.

### How to turn the TV off

<b>A Temporarily</b> Press ❶ to enter standby mode.	The TV will be in standby. To return to the TV mode press ❶.
<b>B Completely</b> Press ❶ on the TV.	The TV will turn off.



**Note:** These buttons should be used in preset mode only.

## 1-2. PRESETTING

After you have installed the TV, you need to preset TV channels. TV stations broadcast their channels at certain frequencies. You must preset these channels to programme numbers on the TV before you can watch the TV programmes.

There are 60 spaces for storing these channels.

Slide open the full function side of the remote commander to reveal preset buttons.

### How to preset channels automatically

If you are unfamiliar with the channel numbers of the stations you wish to preset, use "How to preset channels automatically". If you are familiar with the channel numbers refer to "How to preset TV channels directly".

Action	Result
<b>1</b> Press → to enter the preset mode. 	The programme number will start flashing. 
<b>2</b> Press PROGR + or - or the number buttons to select the programme number to which you want to preset a channel.  <b>Note</b> To select a double-digit number, use the -/-- button. For example, if you want to choose 23, press -/--, 2, and then 3.	The programme number changes. 
<b>3</b> Press ❶ + or - once to search forward or backward for channels.  <b>Note</b> When a channel is tuned in and displayed, the search will stop. If you want to skip a channel, press ❶ + or ❶ -.	When a channel is tuned in and displayed, the search will stop. 
<b>4</b> Press ◊ if you want to store the channel which is tuned in. Press → to exit preset mode without storing. 	The channel is now stored and you have returned to TV mode. 
<b>5</b> Repeat steps 1 to 4 to store the other channels.	

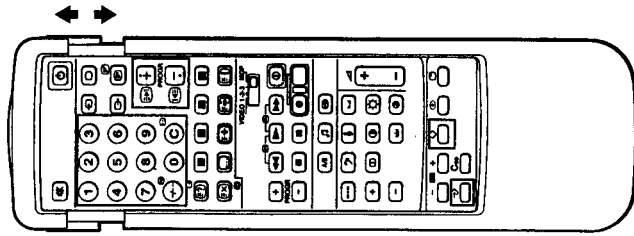
#### Note

By recording the channel numbers displayed after step 3, the direct channel tuning method (page 6) may be used to re-order the programme number sequence to suit your convenience.



How to preset channels directly

Action	Result
<b>1</b> Press ⇨ to enter the preset mode.	The programme number will start flashing.
<b>2</b> Press PROGR +/- or the number buttons to select the programme number on which you want to preset a channel.  <b>Note</b> To select a double-digit number, use the +/- button. For example, if you want to choose 23, press +/-, 2, and then 3.	The programme number changes.
<b>3</b> Press C.	The indication "C-" starts flashing on the display.
<b>4</b> Select the channel number with two digits (e.g. 04) by pressing the number buttons.  <b>Note</b> Press the second number within 5 seconds after the first one, otherwise the operation will be cancelled.	The channel number changes.  <b>Note</b> If you have made a mistake the letter "X" will appear. Repeat step 4 again.
<b>5</b> Press ◇ to store the channel which is tuned in. Press ⇨ to exit the preset mode without storing.  Repeat steps 1 to 5 to store the other channels.	The channel is now stored and you have returned to TV mode.



How to Name a Station

You can use up to five characters to "name" a channel or station (i.e. BBC1).

Action	Result
<b>1</b> Select a programme number you want to name by pressing the PROGR +/- or the number buttons.	The selected programme number will appear.
<b>2</b> Press ⇨.	The programme number starts flashing.
<b>3</b> Press C.	The first column of the station name indication will start flashing.
<b>4</b> Press + or - to select a letter in the alphabet, a number, or a blank space.	The letters of the alphabet, numbers and the space (" ") will appear sequentially.
<b>5</b> Press C.	The first character is now set and the second column will start flashing.
<b>6</b> Repeat steps 4 and 5 to set each letter.	
<b>7</b> Press ◇.	The channel name is now stored and you have returned to TV mode.

How to tune in a channel temporarily

You can tune a channel in temporarily, if it has not been preset.

Action	Result
<b>1</b> Press C.	The indication "C" appears on the screen.
<b>2</b> Select the channel number with two digits by pressing the number buttons (e.g. for channel 4, first press 0, then 4.)	The channel is received, but it is not stored to any programme number.



# 1-3. BASIC TV OPERATION

This section introduces you to the basic control functions which are available on the simple side of the remote commander.

## How to Skip Programmes

Using the PROG +/– buttons you can skip unused programme channel numbers. However, the skipped numbers may still be called up using the number buttons.

Action	Result
<b>1</b> Press ⇨ to enter the preset mode.	The programme number will start flashing.
<b>2</b> Select the programme number that you want to skip by pressing PROG +/– or the number buttons.	The programme number changes.
<b>3</b> Press Coo.	The lowest channel number appears under the programme number.
<b>4</b> Press ◊.	The channel is now stored and you have returned to TV mode.
Repeat steps 1 to 4 to skip other programme numbers.	

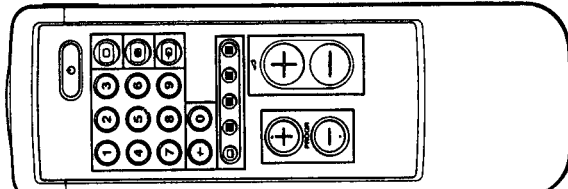
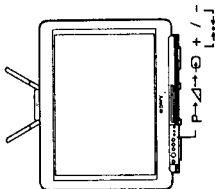
## How to Fine Tune Manually

If the picture is distorted, you can fine tune the channel manually.

Action	Result
Press F + or – repeatedly until the picture looks normal.	The indication ← F → appears on the screen.
Press ⇨ to enter the preset mode.	The programme number starts flashing.
Press ◊.	The fine tuning is stored.

**Note:** Normal tuning can be restored if you preset the channel once more.

**Note:** Press P–Δ→⇨ + /– to open door to open.



## How to Select Programmes

Before you can select programmes make sure that you have preset channels, refer to page 5.

Action	Result
Press PROG +/– or the number buttons. To select a double-digit number, use the +/– button. For example, if you want to choose 23, press +/–, 2, and then 3.	The selected programme is displayed.

## How to Adjust the Volume

Action	Result
Press Δ + or –.	The volume markers will appear and are adjusted accordingly.

## Basic teletext operation

Select

The button to view the teletext.  
The button to request subtitles (P.888).  
One of the coloured buttons for fasttext operation.  
The button to return to TV mode.  
For details about teletext operation, refer to page 14.

## How to operate with the buttons on the TV

You can also select programmes and adjust the volume using the P–Δ→⇨ and ⇨ +/– buttons on the front of the TV.  
For operation, first press the P–Δ→⇨ button repeatedly so that the P (for programme) or Δ (for volume) indication appears on the screen, and then adjust with the ⇨ +/– buttons.

**Note:** To restore to factory set level press ⇨ +/– together.

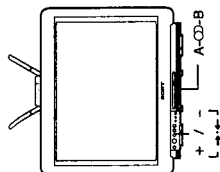
## How to view the video input picture

Press ⇨. To return to the TV mode, press ⇨. For further details, refer to page 18.



## 1-4. ADVANCED TV OPERATION

This section shows you how to use convenient features and how to adjust the picture and sound to your taste.  
Use the full-function side of the Remote Commander.



### How to use on-screen display and special sound features

You can enjoy the following convenient features.

How to	Action	To resume normal picture/sound
Display on-screen indications	Press <b>[C]</b>	Indications disappear after some seconds
Display programme numbers	Press <b>[C]</b> twice	Press <b>[C]</b> twice again.
Mute the sound	Press <b>[M]</b>	Press <b>[M]</b> again.
Select a language in bilingual programmes.	Press A/B. The selected mode of the A-D-B indicator on the TV lights up.	Press A/B.
Set the sound for music listening	Press <b>[J]</b>	Press <b>[J]</b> again.
Use the space sound (special acoustic effect)	Press <b>[S]</b>	Press <b>[S]</b> again.
Request the time	Press <b>[T]</b>	Press <b>[T]</b> again.

### How to adjust the picture and sound

Although the picture and sound have been adjusted at the factory, you might want to adjust them to your own taste. To do this, please follow the steps below.

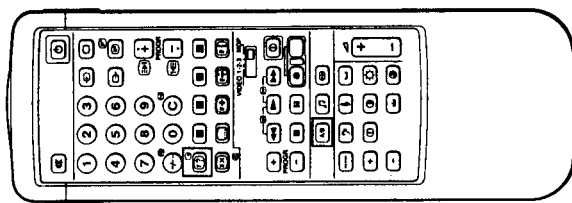
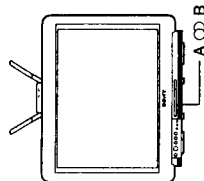
#### For picture adjustment

To Adjust:	Press:	Then:	Result: (- - - - +)
<b>Picture:</b>			
Colour Intensity	<b>[C]</b>	<b>[+]</b>	Less - - - More
Picture Contrast	<b>[C]</b>	<b>[-]</b>	Less - - - More
Brightness	<b>[C]</b>		Dark - - - Bright
<b>Sound:</b>			
Bass	<b>[B]</b>	<b>[+]</b>	Less - - - More
Treble	<b>[T]</b>	<b>[-]</b>	Less - - - More
Balance	<b>[B]</b>		More Left - - - More Right

To reset the picture and sound to factory set levels press **[R]**.

#### On the set:

Press **[+/-]** buttons simultaneously.



### How to select a NICAM broadcast\*

This Sony TV has been designed to select Nicam broadcasts when available. Whenever a Nicam broadcast is received, the **[NICAM]** symbol appears briefly on the screen. When the Nicam programme ends, or you switch channels to one without Nicam, the **[NICAM]** symbol appears. To check if the channel you are watching is receiving Nicam, press the on screen display button **[C]** on the full function side of the remote commander.

### How to select the sound of your choice

Nicam programmes can be broadcast in two ways. You may select the sound you want to hear in either of these, by pressing the **[S]** button on the full function side of the remote commander.

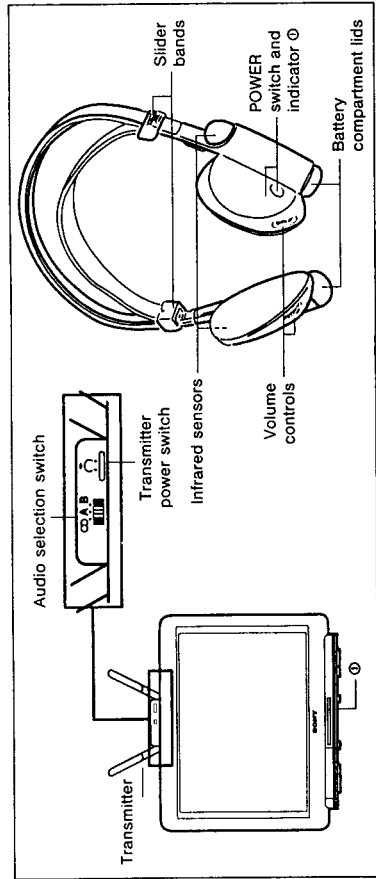
Service being broadcast	Action	The sound you hear	Indication on the TV A-D-B
Nicam		Stereo/Mono (2-channel)	<b>[NICAM]</b>
	Press A/B	Normally broadcast sound	<b>[NICAM]</b>
	Press A/B again to return to Stereo/Mono (2-channel)		
Bilingual		Language A	<b>[NICAM]</b>
	Press A/B	Language B	<b>[NICAM]</b>
	Press A/B	Normally broadcast language	<b>[NICAM]</b>
	Press A/B again to return to language A		

\* Depending on availability of service.



# 1-5. USING THE HEADPHONES

This cordless stereo headphones system uses infrared rays allowing you to enjoy the benefits of normal TV viewing with high quality sound, free from the restriction of a headphones cord.



## How to turn on the Transmitter

Action	Result
<b>1</b> Switch on the TV and press  on the transmitter.	The transmitter will turn on and the infrared emitter lights will glow. Press  again to switch off.
<b>2</b> Carefully raise both the transmitters so that they are sufficiently visible. <b>Note:</b> For best reception, rotate the transmitter lens to face the listening position.	The audio signal is now being transmitted.

## How to turn on the Headphones

Press  on the headphones.	The headphones will turn on and the indicator light will glow. Press  again to switch off.
---------------------------	-----------------------------------------------------------------------------------------------

**Note:** The headphones will automatically turn themselves off after approximately 3 hours. To continue use, turn on the power switch again.

## Listening to a program

- Put on the headphones and, if necessary, adjust the slider bands for comfort.
- Select the required viewing channel using the Remote Commander.
- Adjust the volume controls, on the headphones, so that the volume levels of both channels are the same.  
  
R/D/D/D L/G/S/I  
Earpad Earpad

**Note:** Be sure not to cover the infrared sensors with your hands or hair, or expose the headphones to direct sunlight.

## Using the transmitter audio switch

By adjusting the audio switch on the transmitter you can select the sound of your choice. The A+B indicators on the TV set will identify which service is being broadcast.

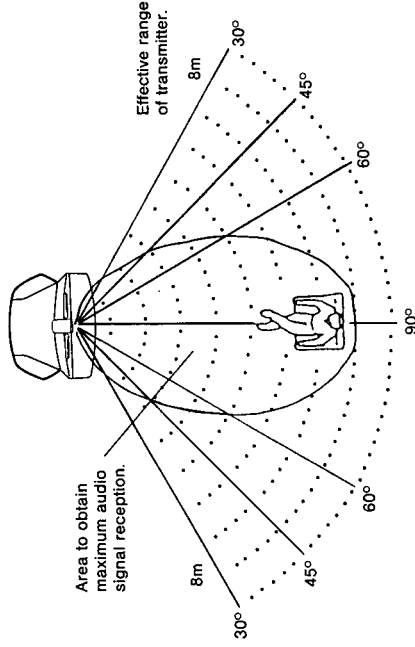
Service being broadcast	Indication on the TV A+B		Transmitter audio switch position	
	A	B	A	B
Nicam			Stereo/Mono (2-channel)	Right channel
				Normally broadcast sound

Bilingual	Language A+B		Language A		Language B	
	A	B	A	B	A	B
			Language A+B	Language A	Language B	
				Normally broadcast language		

• Depending on availability of service.

## Coverage of the infrared rays

The infrared rays will not penetrate walls or opaque glass, therefore, the headphones must be used within the 'in sight' area of the transmitter.



Be sure to remain within the effective range of the infrared rays while viewing the TV. However, should you use the headphones at too great a distance, from the transmitter, the audio signal will become weak and you may experience a hissing noise.

**Note:** These phenomena are inherent to infrared-ray communication and do not mean that there is a problem with the unit itself.

## General transmitter information

Carrier frequency: Right 2.8 MHz Left 2.3 MHz	Frequency response: 18-22,000 Hz
Effective range: Up to 8m approx.	Distortion: Less than 1% at 1 KHz

**Note:** This appliance conforms with EEC directive 87/308/EEC regarding interference suppression.







1-6. TELETEXT OPERATION

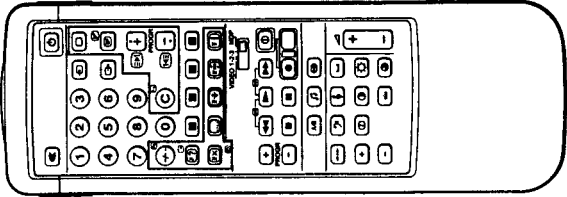
TV stations broadcast teletext programmes via the TV channels. To receive teletext programmes, use the buttons indicated in green on the full side of the Remote Commander.

With the simple side of the Remote Commander, only the basic operation is possible.







How to View the Teletext
















Action	Result
<b>1</b> Select the channel which carries the teletext service you wish to see.	The channel changes on the screen.
<b>2</b> Press  .	 If the teletext signal is not broadcast, then <b>p100</b> is displayed.
<b>3</b> Input three digits for the page number using the number buttons. <b>Note</b> If you make a mistake, type in any three digits, then re-enter the correct page number.	The numbers are entered on the screen. The requested page will appear in a few seconds.
<b>To return to the TV mode.</b> Press  <b>To change the teletext channels</b> First press  to return to the TV mode, then repeat steps 1 to 3.	

**Note**  
If the signal of the TV channel is weak, teletext errors may often occur.



How to Use the Advanced Features of Teletext

How to	Action	Result (On-screen display)
Request the index page.	Press  .	The index page appears. 
Request the subtitle page (p888).	Press  .	The subtitle page is displayed (p888).
Access the next or preceding page.	Press  (PAGE +) or  (PAGE -).	The next or preceding page appears. 

How to	Action	Result
Superimpose the teletext display on the TV programme.	Press  once if you are in text mode, or press  twice if in TV mode. To return to the normal teletext display press  again.	The teletext displays are superimposed on the TV programmes. 
Prevent a teletext page from being updated or changed.	Press  (HOLD). To resume normal teletext reception, press  (TEXT/MIX).	The HOLD symbol (  ) appears on the screen and the chosen sub-page is held until you cancel. 
Enlarge the teletext display.	Press  once to enlarge the upper half. Press twice to enlarge the lower half. Press again to restore the normal display.	The upper half is enlarged. 
Reveal concealed information (e.g. answers to a quiz).	Press  (REVEAL). Press again to conceal the information.	The information is revealed. 
Watch the TV programme while waiting for a requested page to be displayed.	1. Request a new page.	The numbers are entered.
	2. Press  .	The TV program is displayed, and the requested page number and other teletext data appear at the top of the screen.
	3. When the requested page has been captured, the page number remains and the other data disappears.	
	4. Press  to view this page.	The requested page is displayed.

Some of the features may not be available depending on the Teletext service.



# 1-7. ADDITIONAL INFORMATION

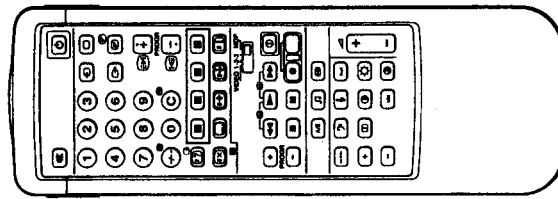
## How to use the FASTEXT Feature

FASTEXT feature allows you to access pages quickly with one key operation. When a FASTEXT page is broadcast, a colour coded menu appears at the bottom of the screen. Each coloured prompt corresponds to the coloured buttons on either side of your Remote Commander.

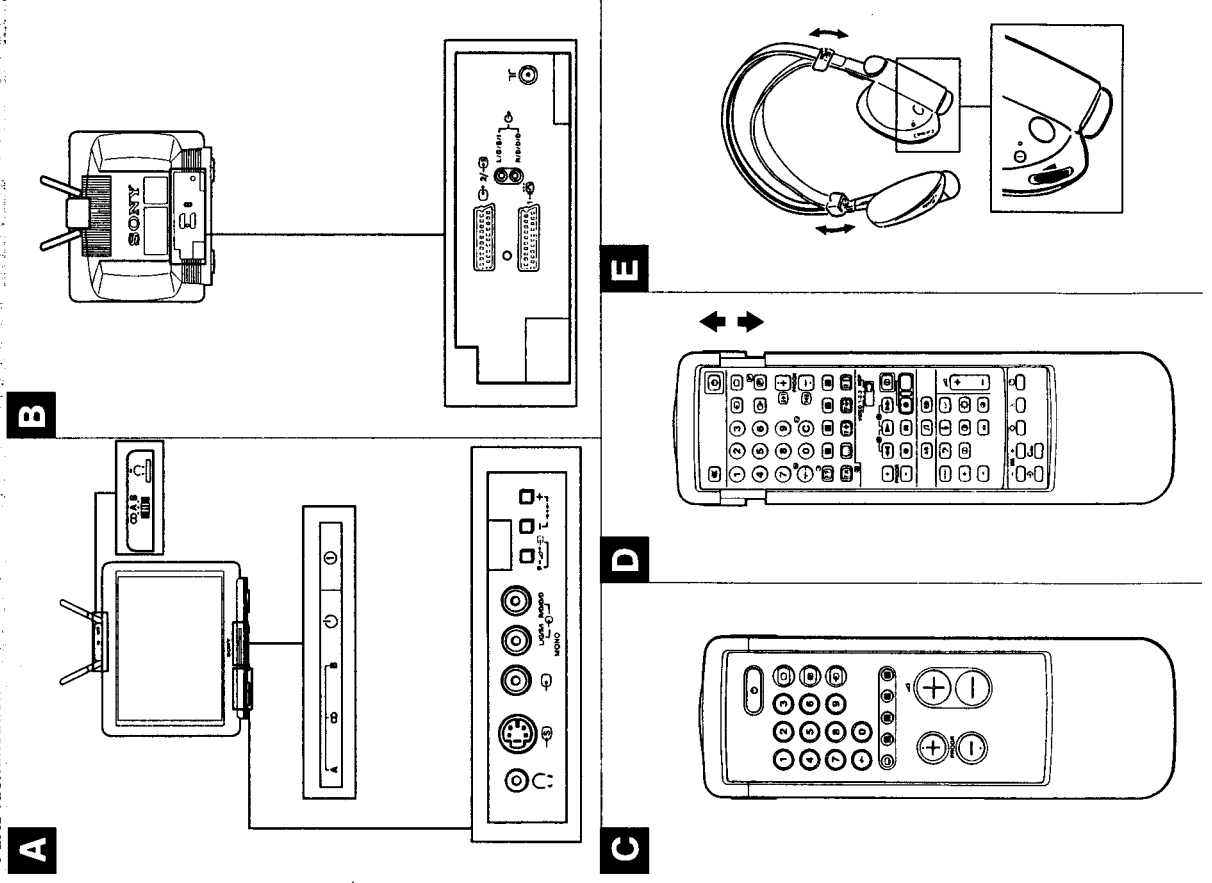
Operation	
Action	Result
Press one of the coloured buttons which corresponds to the coloured prompt on the teletext.	The selected teletext page appears.

**Note**  
Correct FASTEXT operation depends on the necessary signals sent from the TV station.

**Summary Note**  
A brief explanation of all TV and Commander functions can be referred to on page 21.



## Parts Identification





This section briefly describes the buttons and controls on the TV set and on the Remote Commander. For more information, refer to the pages given next to each description.

A TV set – Front			
Sign	Name	Refer to page	
ⓘ	Main power switch	4	
⓪	Standby indicator	4	
A-⓪-B	NICAM indicators	10, 11	
⓪	Headphones jack (stereo minijack)	17	
⓪-⓪-⓪	Input jacks (S-video/video/audio)	17	
P-⓪-⓪-⓪	Function selector (Programme/volume/input)	9, 18	
- + ⓪-⓪-⓪	Adjustment buttons for function selector	9, 18	
⓪	Transmitter power switch	12	
⓪-A-B	Audio mode selector	12	

B TV set – Rear			
Sign	Name	Refer to page	
⓪+2/⓪	21-pin Euro-AV connector (S-video/video input, TV/video output)	17	
1-⓪	21-pin Euro-AV connector (RGB/video input, TV output)	17	
⓪+	Audio output jacks (phono jacks)	17	
⓪	Aerial terminal (IEC type)	3	

C Remote Commander – simple side			
Sign	Name	Refer to page	
⓪	Input mode selector	18	
⓪	Teletext button	14	
⓪	Fastext buttons	16	
⓪	TV mode selector	4	
⓪	Standby button	4	
1,2,3,4,5,6,7,8,9, and 0	Number buttons	9	
- / - -	Double-digit entering button	9	
⓪ + / -	Volume control button	9	
PROGR + / -	Programme selector	9	

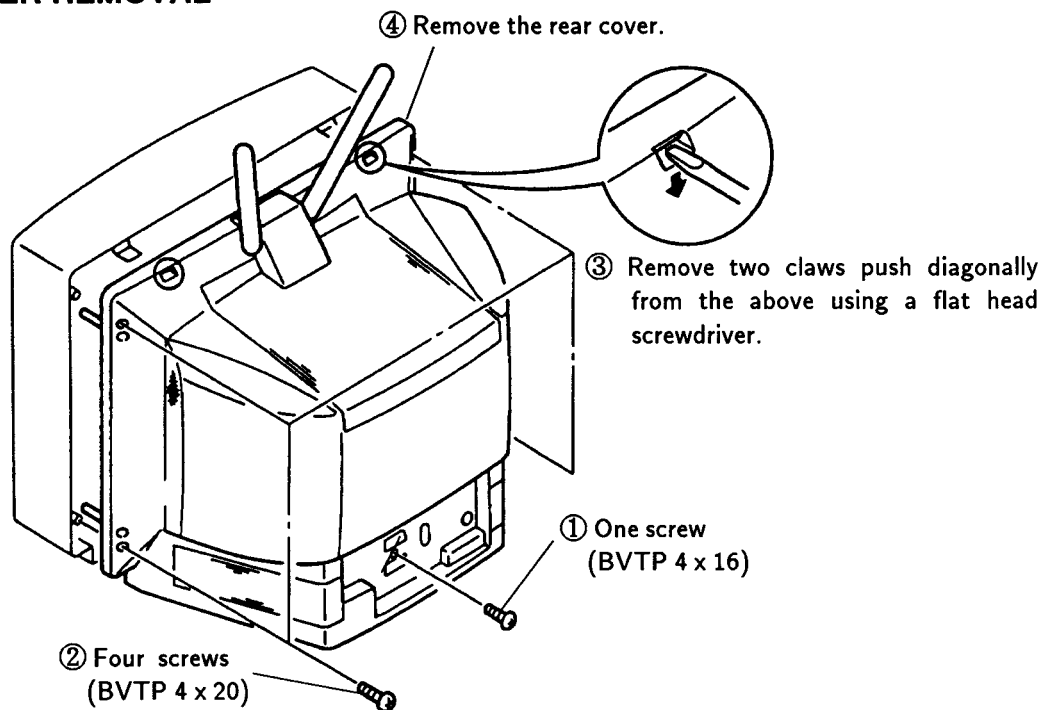
D Remote Commander – full function side			
Sign	Name	Refer to page	
⓪	Mute on/off button	10	
⓪	Standby button	4	
1,2,3,4,5,6,7,8,9, and 0	Number buttons	9	
⓪	Input mode selector	18	
⓪	TV power on/TV mode selector button	4	
⓪+	Output mode selector	18	
⓪	Teletext button	14	
⓪	Music button	10	
A/B	Selector for NICAM	11	
- / - -	Double-digit entering button	9	
C	Direct channel entering button	6, 7	
⓪	Space sound button	10	
⓪	Request time display	10	
⓪	Teletext operation buttons	14, 15	
⓪	Fastext buttons	16	
⓪	On-screen display button	10	
→→→	Picture and sound adjustment reset button	10	
⓪ + / -	Volume control	9	
PROGR + / -	Programme selector	9	
⓪	Picture and sound controls	10	
⓪	Video equipment selector	19	
⓪	Video equipment operation buttons	19	
⓪	Programme number clear button	8	
⓪	Channel preset button	5 ... 8	
⓪ +	Tuning buttons	5	
⓪	Channel store button	5 ... 8	
⓪	Station label button	7	

E Headphones			
Sign	Name	Refer to page	
⓪	Power switch	12	
⓪	Volume control	12	

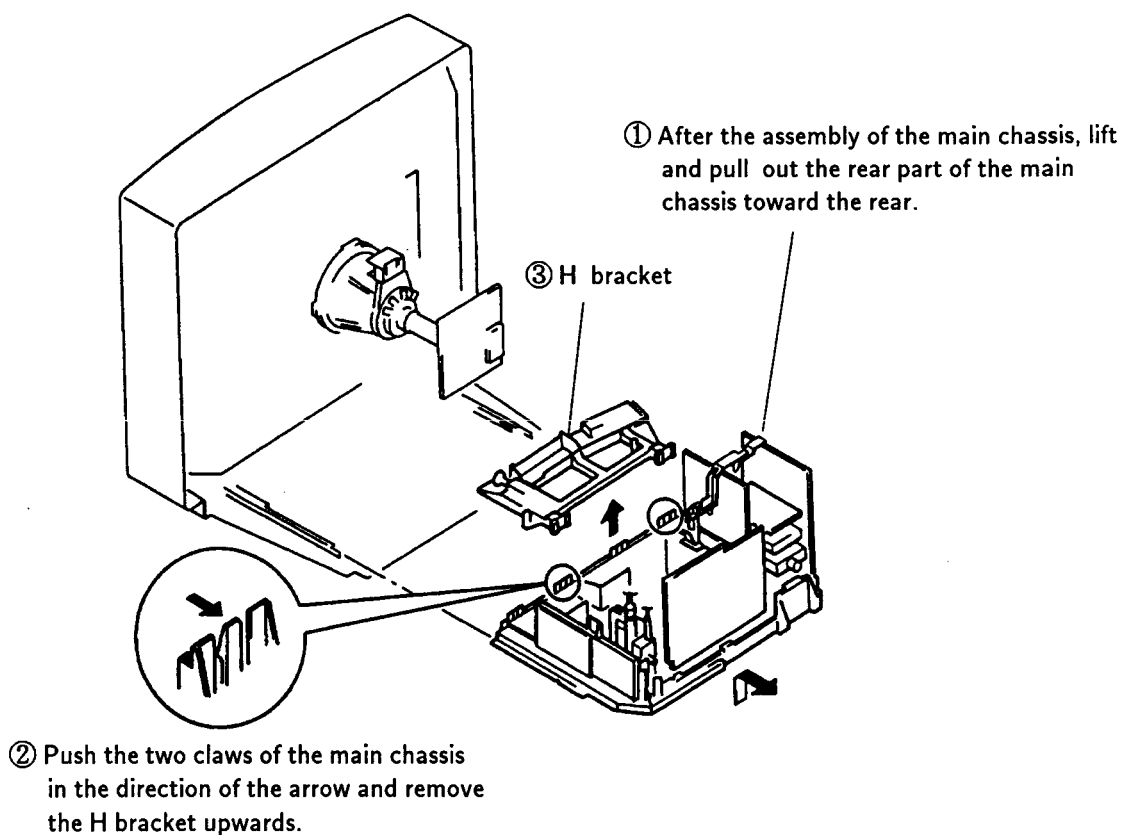


## SECTION 2 DISASSEMBLY

### 2-1. REAR COVER REMOVAL

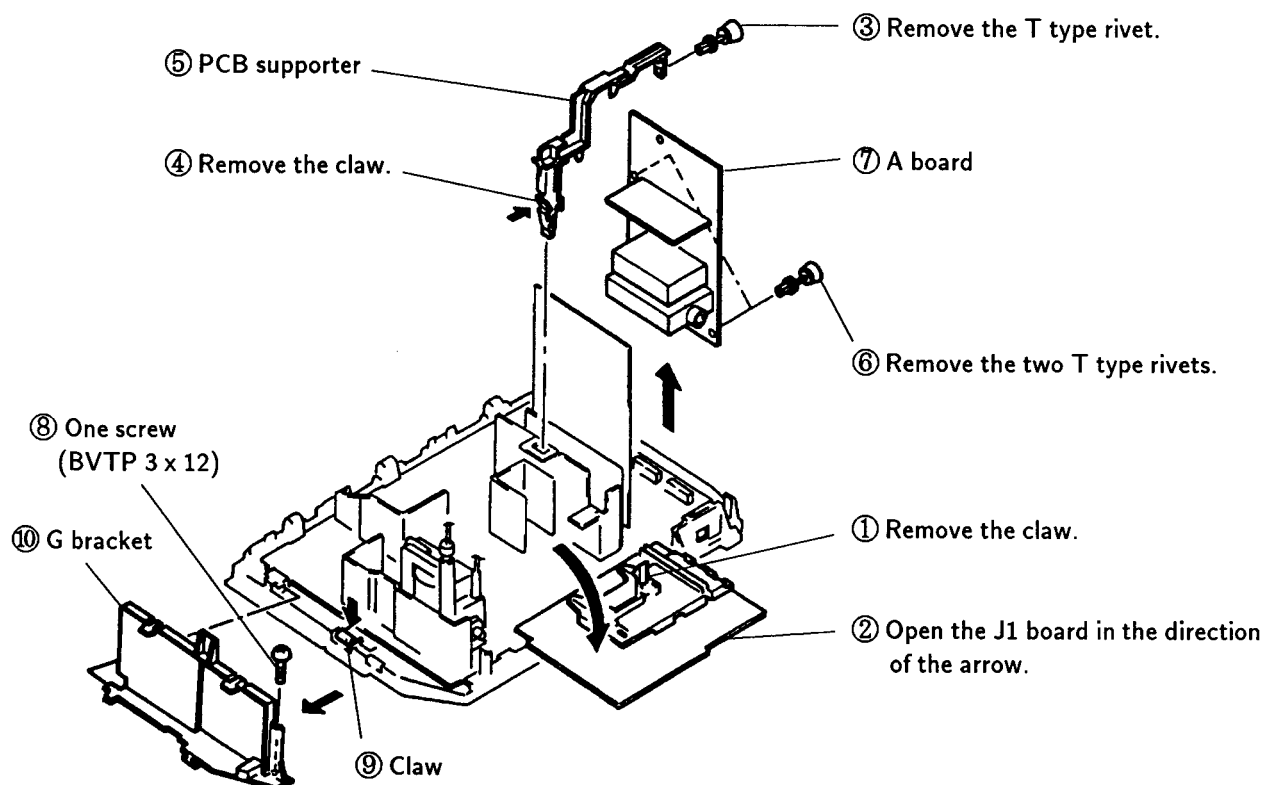


### 2-2. CHASSIS ASSEMBLY REMOVAL

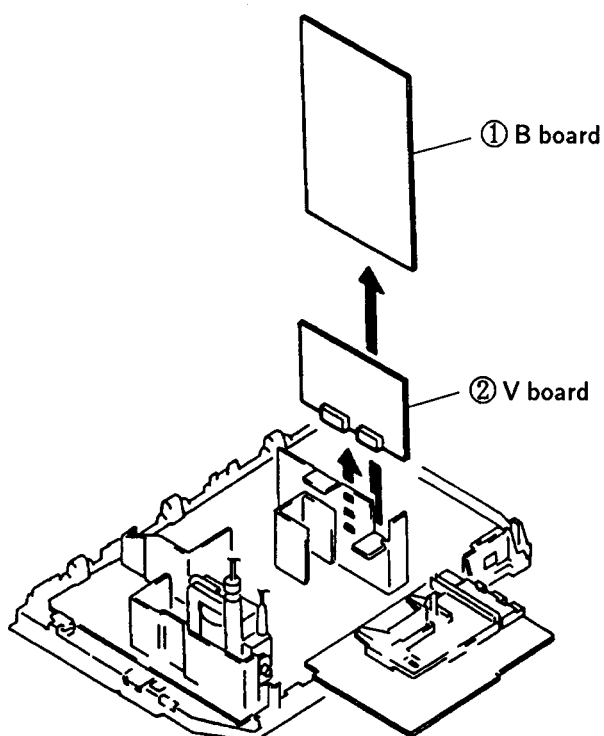




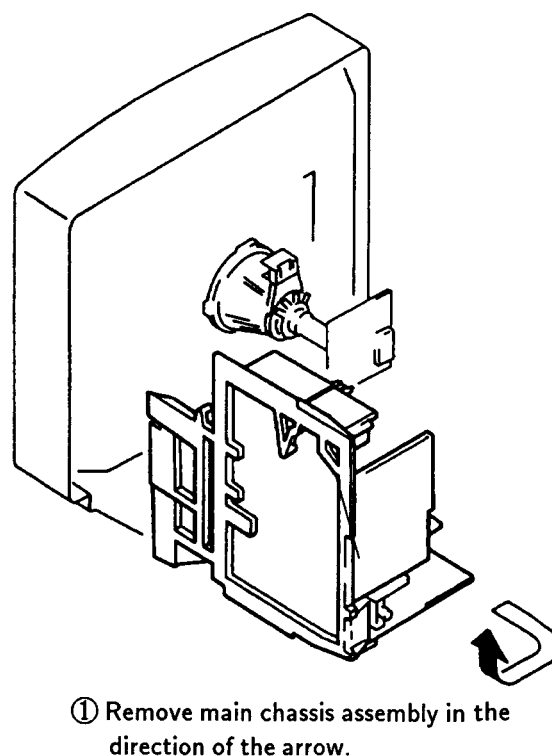
## 2-3. A, A1, J1 BOARDS AND G BRACKET REMOVAL



## 2-4. B AND V BOARDS REMOVAL

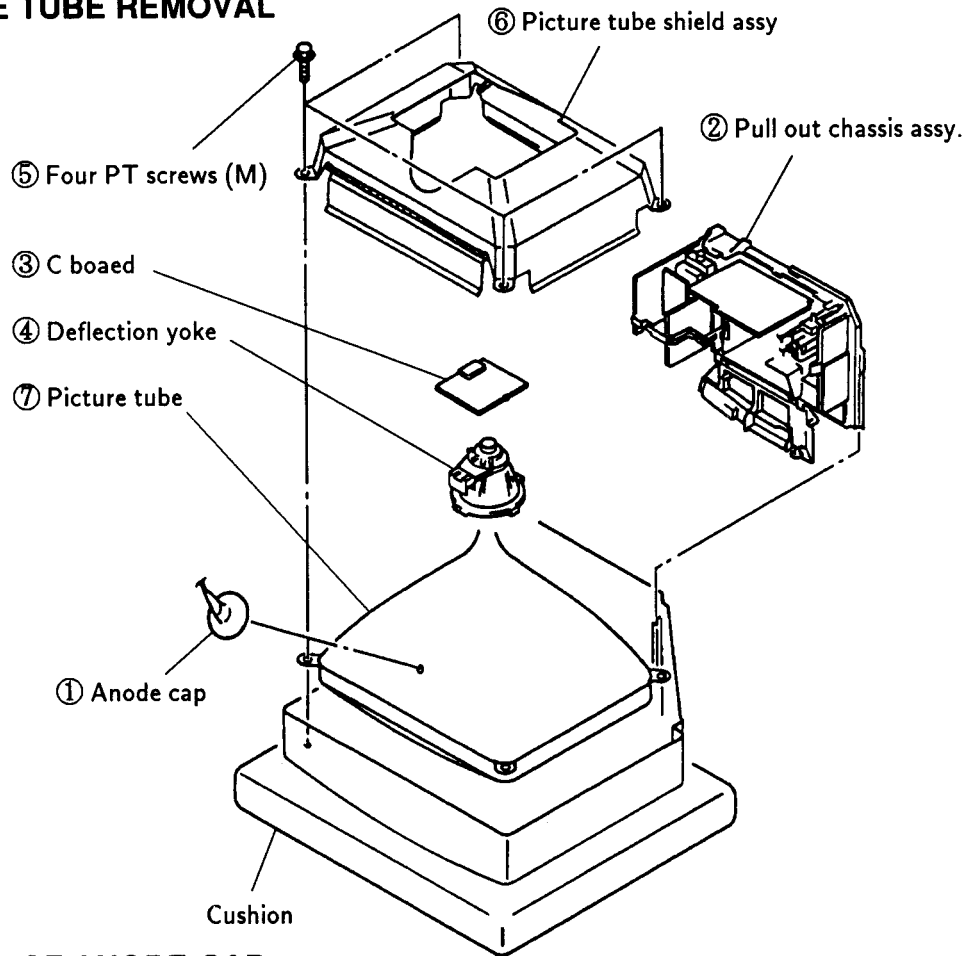


## 2-5. SERVICE POSITION





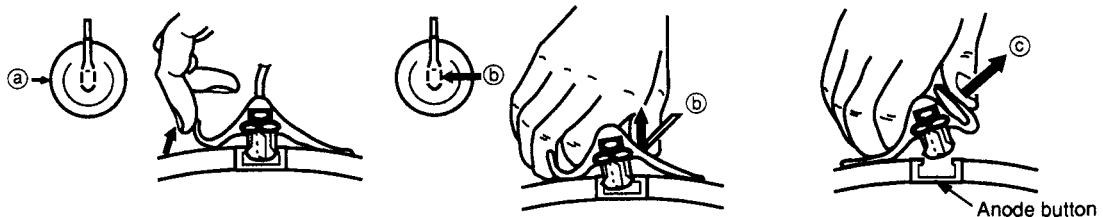
## 2-6. PICTURE TUBE REMOVAL



### • REMOVAL OF ANODE-CAP

**Note:** Short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT shield, or carbon painted on the CRT, after removing the anode.

#### • REMOVING PROCEDURES



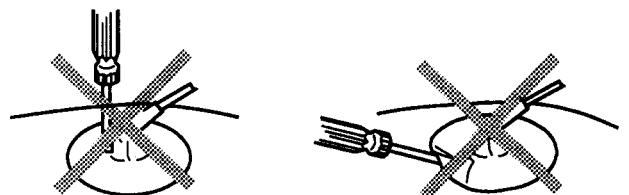
① Turn up one side of the rubber cap in the direction indicated by the arrow ①.

② Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow ②.

③ When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling up it in the direction of arrow ③.

#### • HOW TO HANDLE AN ANODE-CAP

- ① Don't hurt the surface of anode-caps with sharp material !
- ② Don't press the rubber hardly not to hurt inside of anode-caps !  
A metal fitting called as shatter-hook terminal is built in the rubber.
- ③ Don't turn the foot of rubber over hardly !  
The shatter-hook terminal will stick out or hurt the rubber.





## SECTION 3

### SET-UP ADJUSTMENTS

- When complete readjustment is necessary or a new picture tube is installed, carry out the following adjustments.
- Unless there is specific instruction to the contrary, carry out these adjustments with the rated power supply.
- Unless there is specific instruction to the contrary, set the controls and switches this way :
  - Contrast .....80%  
(or remote control normal)
  - ⚙ Brightness .....50%

- Carry out the following adjustments in this order:

1. Beam landing
2. Convergence
3. Focus
4. White balance

**Note :** Testing equipment required

1. Color bar/pattern generator
2. Degausser
3. DC power supply
4. Digital multimeter
5. Oscilloscope

#### Preparations :

- In order to reduce the influence of geomagnetism on the set's picture tube face it east or west.
- Switch on the set's power and degauss with the degausser.

#### 3-1. BEAM LANDING

1. Input the white signal with the pattern generator.
 

Contrast	}	normal
Brightness		
2. Position neck ass'y as shown in Fig 3-2.
3. Set the pattern generator raster signal to red.
4. Move the deflection yoke to the rear and adjust with the purity control so that the red is at the center and the blue and the green take up equally sized areas on each side.  
(See Figures 3-1 through 3-3.)
5. Move the deflection yoke forward and adjust so that entire screen is red. (See Figure 3-1.)
6. Switch the raster signal to blue, then to green and verify the condition.
7. When the position of the deflection yoke has been decided, fasten the deflection yoke with the screws.
8. If the beam does not land correctly in all the corners, use a magnet to adjust it.  
(See Figure 3-4.)

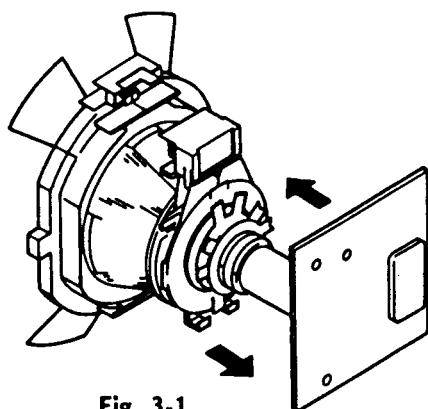


Fig. 3-1

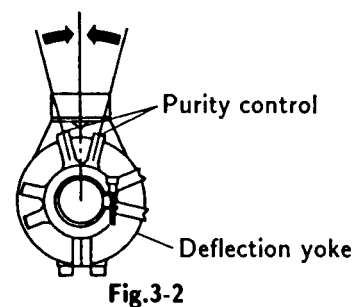


Fig.3-2

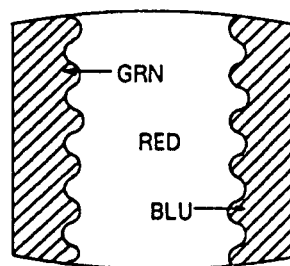


Fig. 3-3

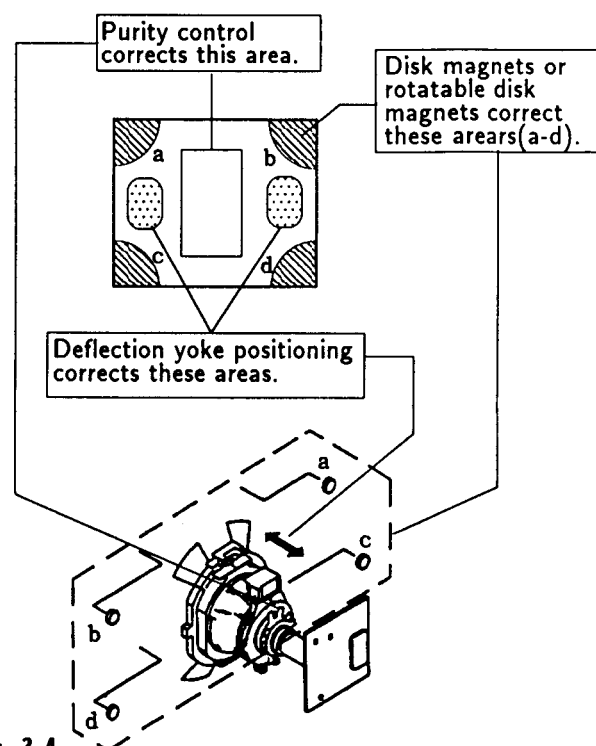


Fig. 3-4

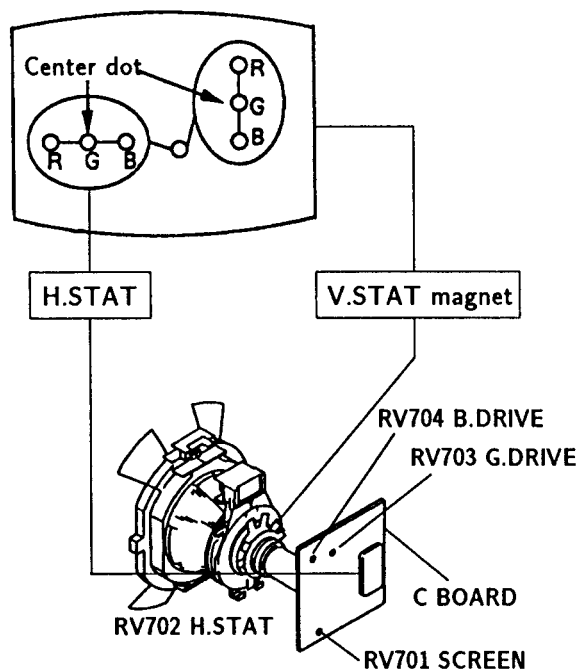


### 3-2. CONVERGENCE

#### Preparations :

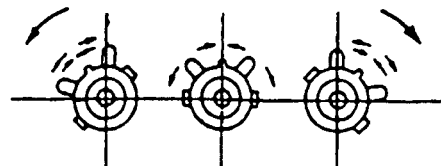
- Before starting this adjustment, adjust the focus, horizontal size, and vertical size.
- Minimize the brightness setting.
- Provide dot pattern.

#### (1) Horizontal and vertical static convergence

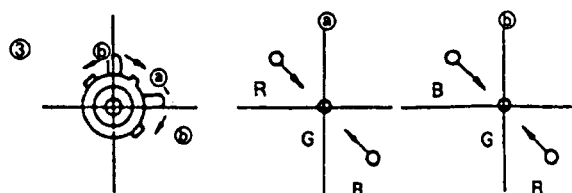
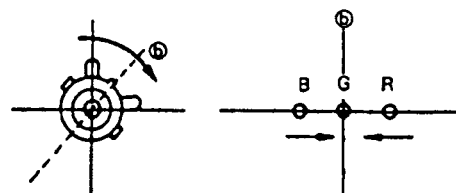
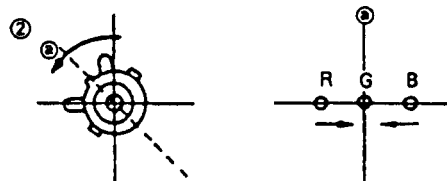
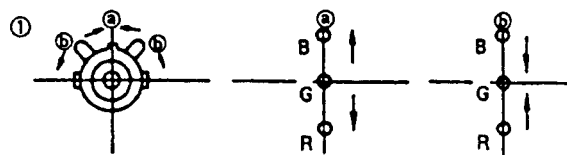


1. (Moving horizontally), adjust the H.STAT control so that the red, green, and blue points are on top of each other at the center of the screen.
2. (Moving vertically), adjust the V.STAT magnet so that the red, green, and blue points are on top of each other at the center of the screen.
3. If the H.STAT variable resistor cannot bring the red, green, and blue points together at the center of the screen, adjust the horizontal convergence with the H.STAT variable resistor and the V. STAT magnet in the manner given below.  
(In this case, the H.STAT variable resistor and the V. STAT magnet influence each other)

- Tilt the V.STAT magnet and adjust the static convergence by opening or closing the V.STAT magnet.

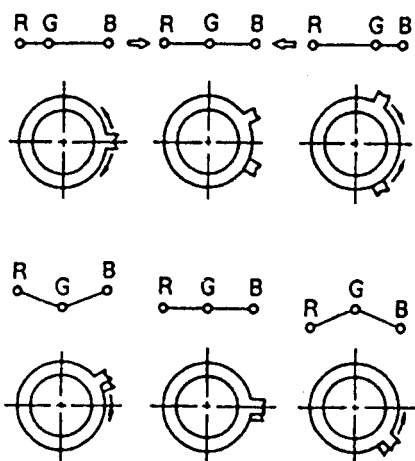


4. If the V.STAT magnet is moved in the direction of the ① and ② arrows, the red, green, and blue points move as shown below.



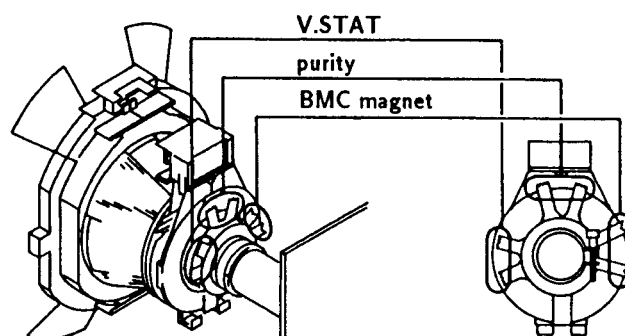


● Operation of BMC (Hexapole) Magnet



- The respective dot positions resulting from moving each magnet interact, so be sure to perform adjustment while tracking.

Use the H.STAT VR to adjust the red, green, and blue dots so they coincide at the center of screen (by moving the dots in the horizontal direction).



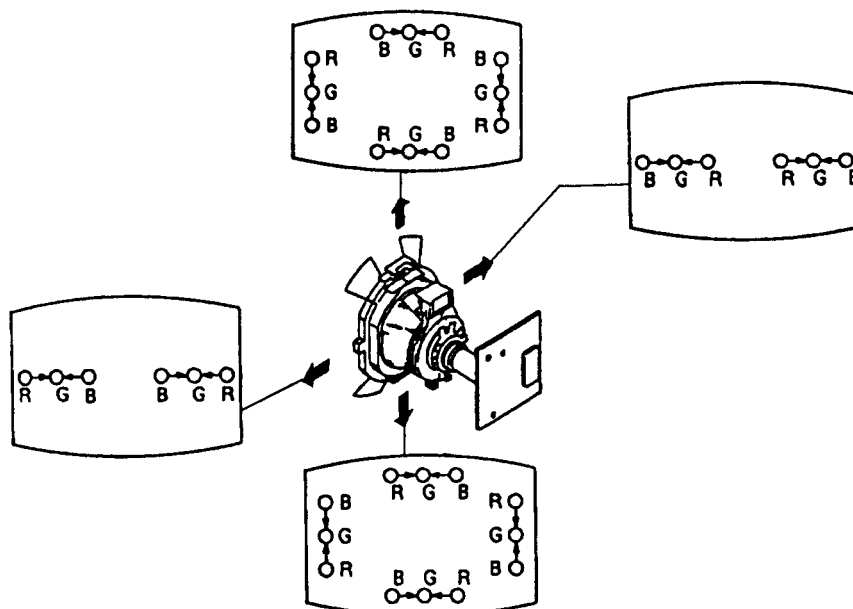
(2) Dynamic Convergence Adjustment

**Preparations :**

Before starting this adjustment, adjust the horizontal static convergence and the vertical static convergence.

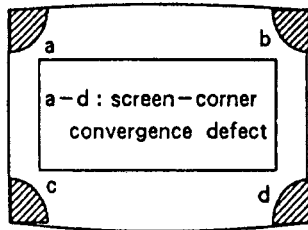
1. Slightly loosen the deflection yoke screws.
2. Remove the deflection yoke spacer.

3. Move the deflection yoke as shown in the figure below and optimize the convergence.
4. Tighten the deflection yoke screws.
5. Install the defelection yoke spacer.

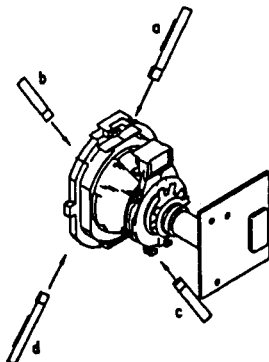




**(3) Screen corner convergence**



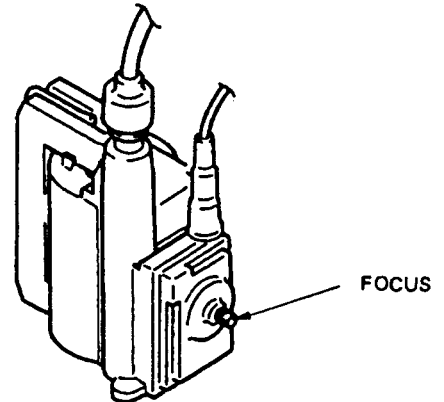
Install the permalloy assembly for the section with faulty.



Permalloy

**3-3. FOCUS**

Adjust the focus to optimize the screen.



**3-4. WHITE BALANCE**

**[ Screen G2 setting ]**

1. Input the dot signal from the pattern generator.
2. Set the picture brightness control to its lowest level.
3. Apply 170V DC to the R, G, and B cathodes with an external power supply.
4. While watching the picture, adjust G2 control RV701 (Screen) to the point just before the return lines disappear.

**[ White balance adjustment ]**

1. Input an all-white signal from the pattern generator.
2. Set the picture brightness and color controls to their normal levels.
3. Use the RV704 (B Drive) and RV703 (G Drive) to adjust white balance.

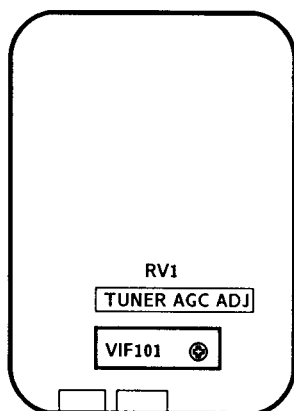
In the adjustments below, have the picture color and brightness settings at their normal levels unless there is a specific instruction to the contrary.



## SECTION 4

### CIRCUIT ADJUSTMENTS

#### 4-1. A BOARD ADJUSTMENTS

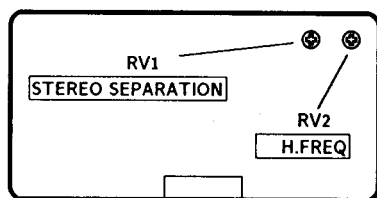


A BOARD (COMPONENT SIDE)

##### TUNER AGC ADJUSTMENT (AGC VR)

1. Align with an appropriate signal between stations.
2. Adjust AGC VR so that snow noise and cross modulation just disappear from the picture.

#### IFG5.5S SIF



IFG5.5S SIF -component side-

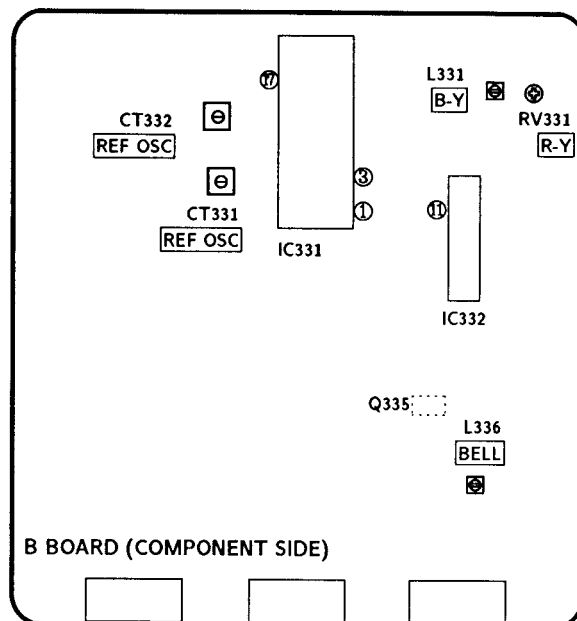
##### STEREO SEPARATION ADJUSTMENT (RV1)

1. Input stereo signals. (L-CH 400Hz, R-CH 1KHz)
2. Check the stereo indicator.
3. Connect an oscilloscope to pin⑧ (CH1) of CN1 through band pass filter of 1KHz
4. Adjust RV1 so that 1KHz voltage goes down to the minimum.

##### H FREQ (RV2)

1. Input a PAL COLOR BAR signal, then connect a jumper between pin⑫ IC4 and GND.
2. Connect a frequency counter to pin④ IFG5.5S (HP) of CN1 through a probe of 10 : 1.
3. Adjust RV2 (H.FREQ)  $15.625 \pm 50\text{Hz}$ .
4. After adjustment, remove the jumper.

#### 4-2. B BOARD ADJUSTMENTS



B BOARD (COMPONENT SIDE)

##### REFERENCE OSCILLATOR ADJUSTMENT (CT332 8.8MHz)

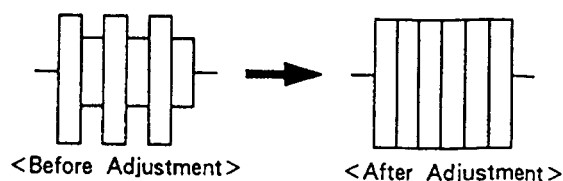
1. Input a PAL color bar signal.
2. Ground pin ⑪ of the IC331.
3. Adjust CT332 to obtain synchronization.

##### REFERENCE OSCILLATOR ADJUSTMENT (CT331 7.16MHz)

1. Input an NTSC color bar signal.
2. Ground pin ⑪ of IC331.
3. Adjust the CT331 to obtain synchronization.
4. Remove the jumper grounding pin ⑪ of IC331.

##### BELL FILTER ADJUSTMENT (L336)

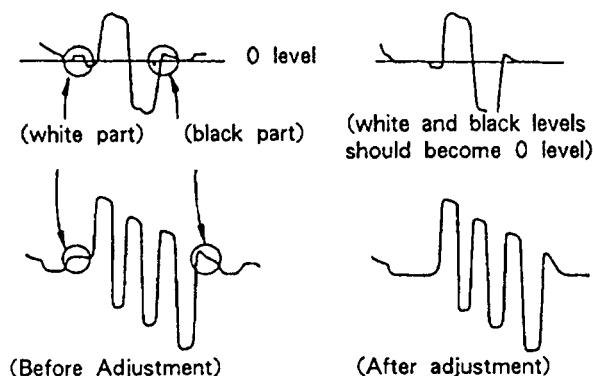
1. Input a SECAM color bar signal.
2. Connect the oscilloscope to the emitter of Q335.
3. Adjust L336 so that the waveform is flat.



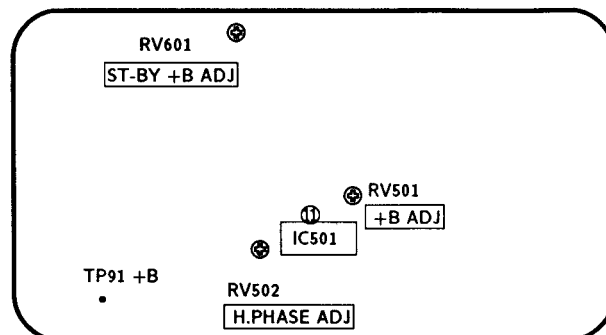


### DISCRIMINATION ADJUSTMENTS (RV331 and L331)

1. Input a SECAM color bar signal.
2. Connect the oscilloscope to pin ① of IC331.
3. Adjust RV331 until the white and black sections of the waveform at pin ① are at the 0 level.  
Connect the oscilloscope to pin ③ of IC331.
4. Adjust L331 until the white and black sections of the waveform at pin ③ are at the 0 level.
5. the waveform at pin ③ are at the 0 level.



### 4-3. D BOARD ADJUSTMENTS



D BOARD (COMPONENT SIDE)

#### +B ADJUSTMENT (RV501)

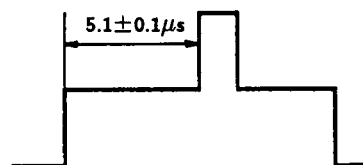
1. Connect the digital multimeter to TP91.
2. Adjust RV501 to obtain  $135 \pm 0.2V$ .

#### ST-BY +B ADJUSTMENT (RV601)

1. Put the system into  $\text{⏻}$  standby mode (remote commander).
2. Connect the digital multimeter to TP91.
3. Adjust RV601 to obtain  $135 \pm 3V$ .
4. Take the system out of  $\text{⏻}$  standby mode (remote commander).

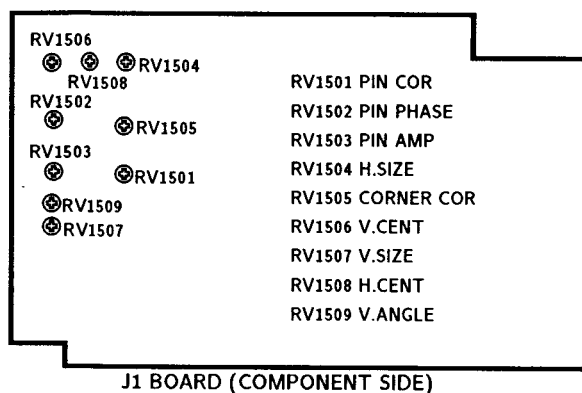
#### H.PHASE ADJUSTMENT (RV502)

1. Input a PAL color bar signal.
2. Set the picture and brightness controls to their normal levels.
3. Set RV1508 (H.CENT) to its mechanical center.
4. Connect the oscilloscope to pin ⑪ (SCP) of IC 501.
5. Rotate RV502 to adjust to  $5.1 \pm 0.1\mu s$ .

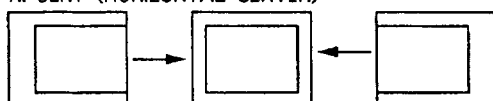




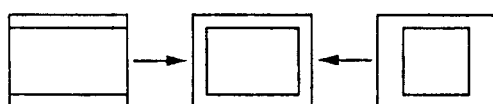
## 4-4. J1 BOARD ADJUSTMENTS



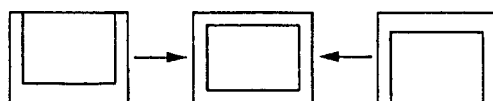
RV1508  
H. CENT (HORIZONTAL CENTER)



RV1504  
H. SIZE (HORIZONTAL SIZE)



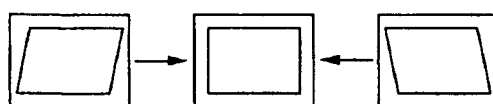
RV1506  
V. CENT (VERTICAL CENTER)



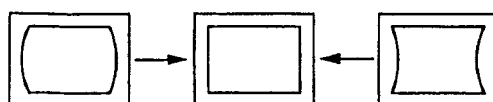
RV1507  
V. SIZE (VERTICAL SIZE)



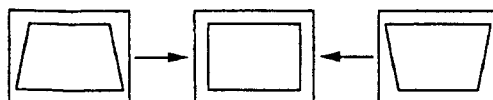
RV1509  
V. ANGLE (VERTICAL ANGLE)



RV1503  
PIN AMP (PINCUSHION AMPLIFIER)



RV1502  
PIN PHASE (PINCUSHION PHASE)



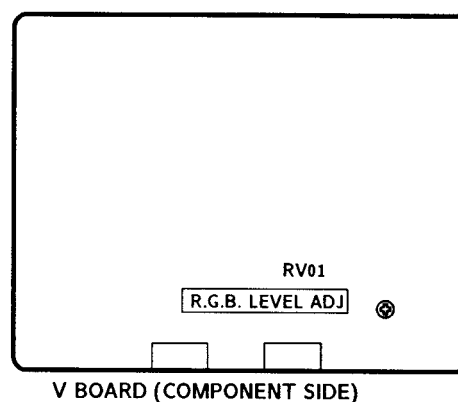
RV1501  
PIN. COR (PINCUSHION CORRECT)



RV1505  
CORNER COR (CORNER CORRECT)



## 4-5. V BOARD ADJUSTMENT



### RGB LEVEL ADJUSTMENT (RV01)

1. Maximize the picture setting.
2. Adjust RV01 so that the RGB output is 0.75V.



## 4-6. SECONDARY ADJUSTMENTS

### SUB BRIGHTNESS ADJUSTMENT

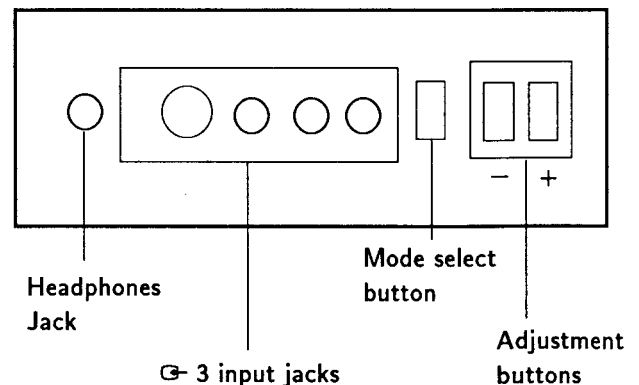
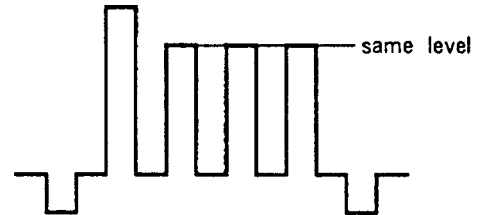
1. Set the system to receive a test pattern.
2. Press → • ← on the remote commander to put the system into normal mode.
3. Switch off the power.
4. While depressing the adjusting buttons + and – simultaneously, turn on the power. (SUB mode is obtained)
5. Minimize the ● contrast setting.
6. Adjust the ⚙ brightness control so that the gray scale 0 IRE section is cut off completely and the 20 IRE section is barely glowing.
7. Depress the ◇ (store) button of the remote commander. (SUB mode is released)

If there is no test color pattern

1. Set the system to receive a color pattern.
2. Press → • ← on the remote commander to put the system into normal mode.  
Set the ⚙ color to its normal state.
- 3-5. Steps are the same as above.
6. Since 20 IRE is nearly blue, adjust the ⚙ brightness control so that the blue barely glows.
7. Same as step 7 above.
8. Press → • ← on the remote commander to put the system into normal mode.

### SUB COLOR ADJUSTMENT

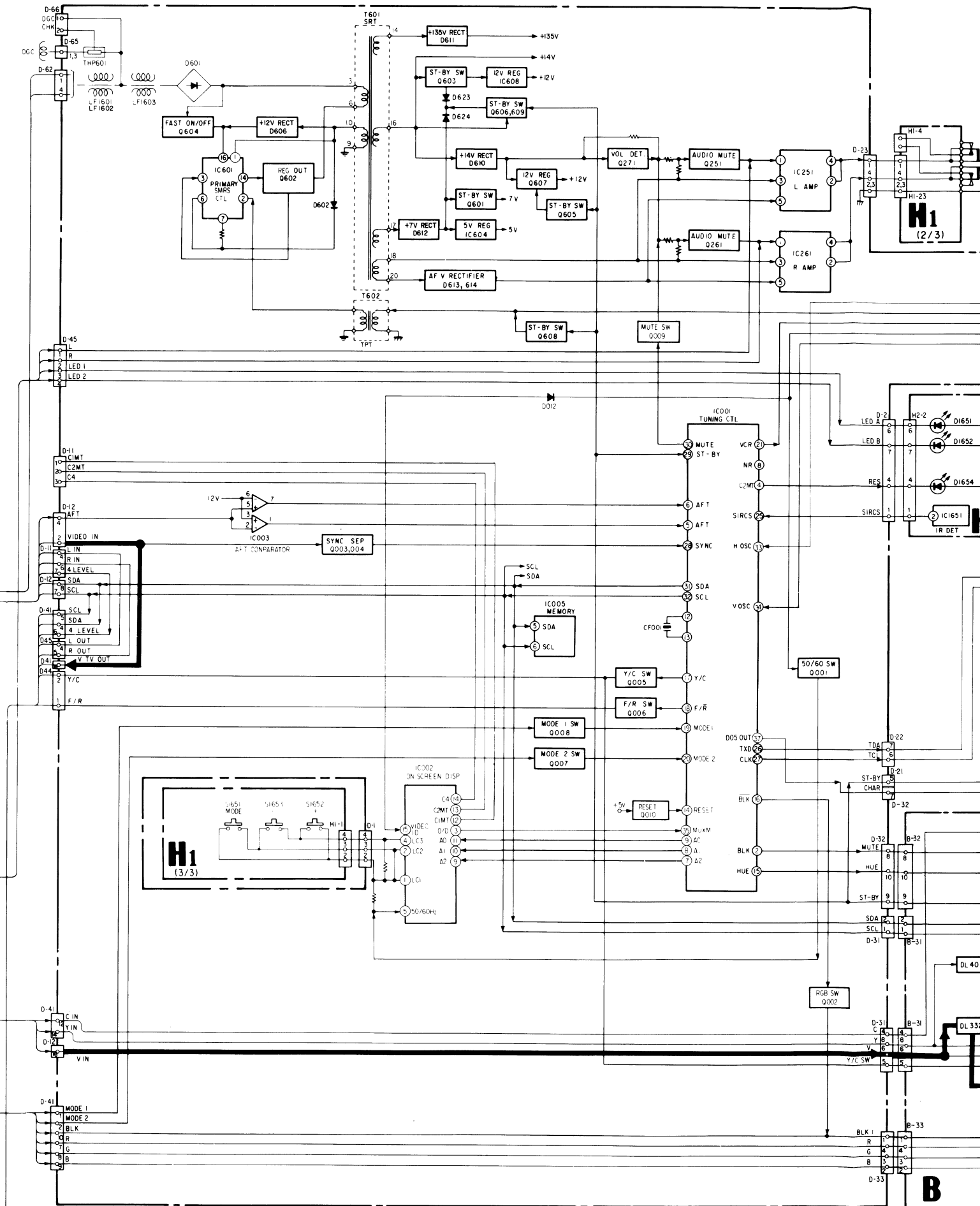
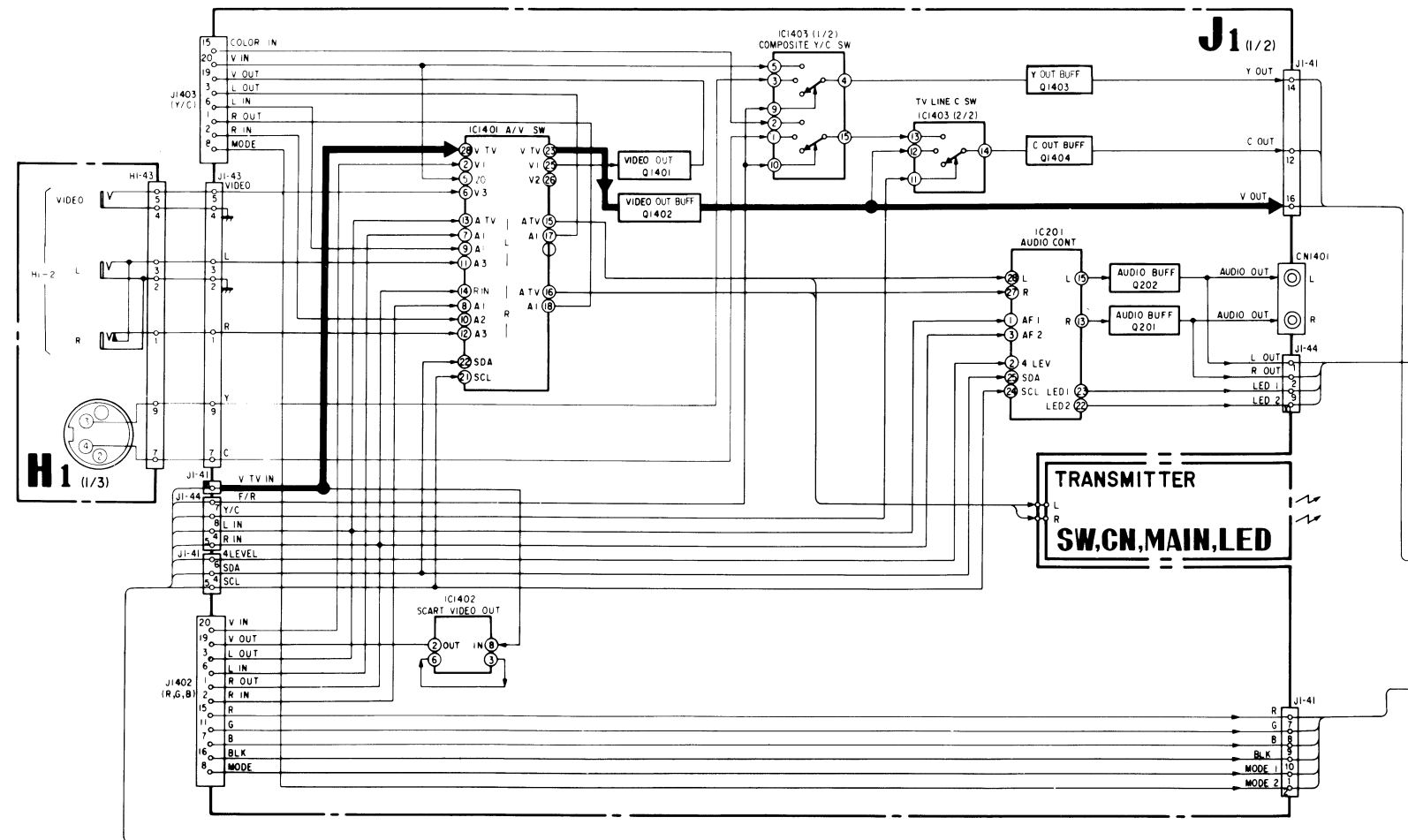
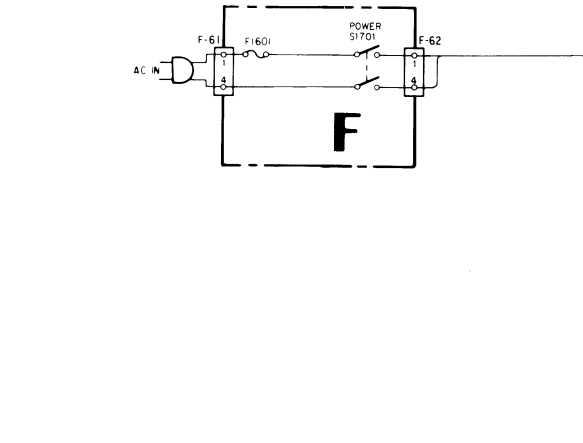
1. Set the system to receive color bars.
2. Press → • ← on the remote commander to put the system into normal mode.
3. Cut off the power.
4. While depressing the adjustment buttons + and – simultaneously, turn on the power. (SUB mode is obtained).
5. Adjust the color control so that the B out waveform (pin ⑤ of C board connector CNC72) is as shown in the figure below.
6. Depress the ◇ (store) button of the remote commander. (SUB mode is released)



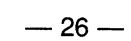


# SECTION 5 DIAGRAMS

## 5-1. BLOCK DIAGRAM









**H1**[CONTROL SW, AV INPUT,  
HEADPHONE]**H2**

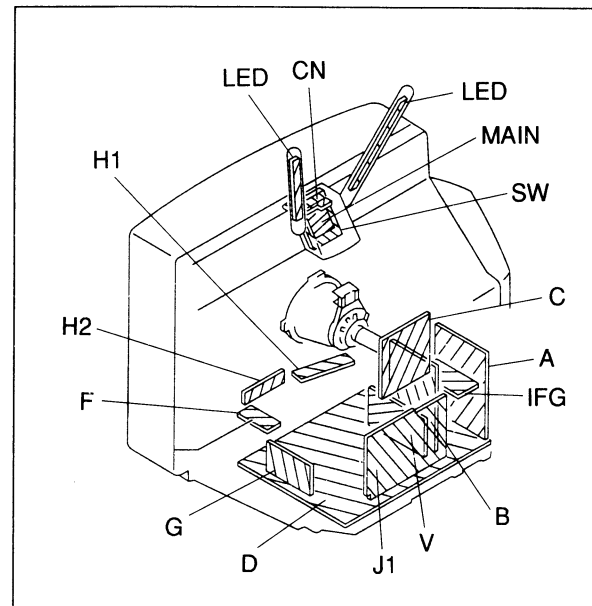
[SIRCS RECEIVER, INDICATOR]


**F**

[AC IN, POWER SW]

**A**

[TUNER, — A Board —

**5-2. CIRCUIT BOARDS LOCATION****Note:**

Components identified by shading and marked  are critical for safety. Replace only with the part number specified.

**Reference information**







RESISTOR	: RN	METAL FILM
	: RC	SOLID
	: FPRD	NON-FLAMMABLE CARBON
	: FUSE	NON-FLAMMABLE FUSIBLE
	: RS	NON-FLAMMABLE METALOXIDE
	: RB	NON-FLAMMABLE CEMENT
	: RW	NON-FLAMMABLE WIREWOUND
	: ※	VARIABLE RESISTOR
COIL	: LF-8L	MINIATURE INDUCTOR
CAPACITOR	: TA	TANTALUM
	: PS	STYROL
	: PP	POLYPROPYLENE
	: PT	MYLAR
	: MPS	METALIZED POLYESTER
	: MPP	METALIZED POLYPROPYLENE
	: ALB	BIPOLAR
	: ALT	HIGH TEMPERATURE
	: ALR	HIGH RIPPLE

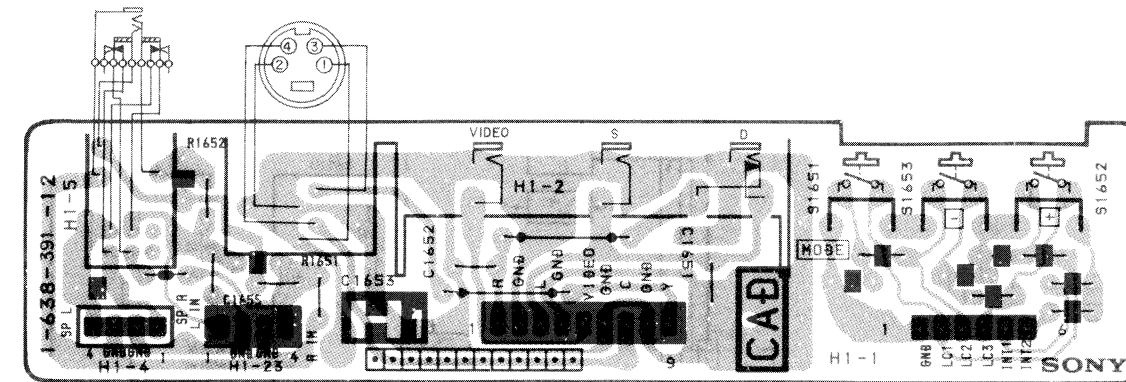
**5-3. SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS****Note:**

- All capacitors are in  $\mu\text{F}$  unless otherwise stated ( $\text{p}=\text{pF}$ ). Working voltage of 50V or less are not indicated, except for electrolytics.
- Resistors which do not have a power rating value shown are as follows.

Pitch: 5 mm  
Power rating: 1/4W

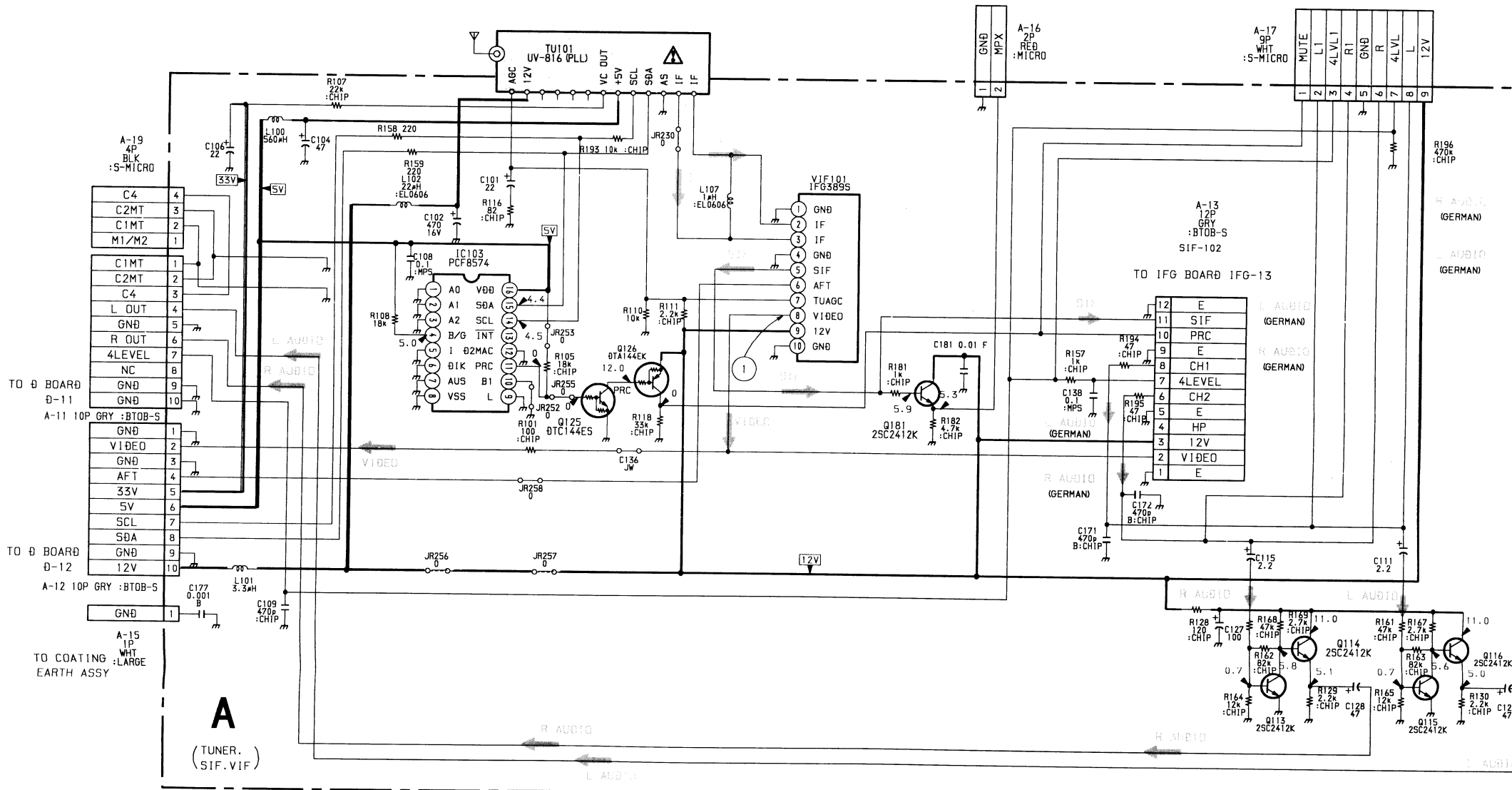
Chip resistors are 1/10W.

- All resistor values are in Ohms.  $\text{k}\Omega=1000\Omega$ ,  $\text{M}\Omega=1000\text{k}\Omega$ .
- : nonflammable resistor.
- : fusible resistor.
- : internal component.
- : panel outline or servicing adjustment.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- All voltages shown are in Volts.
- Readings were taken with a 10  $\text{M}\Omega$  digital multimeter.
- Readings were taken with a colour-bar signal input.
- Voltage variations may occur to normal production tolerance.
- : Voltage supply rails.
- : Signal path.

**— H1 Board —**



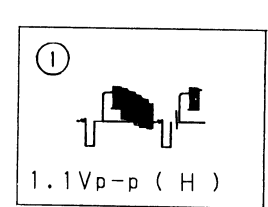
A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M  
N  
O  
P



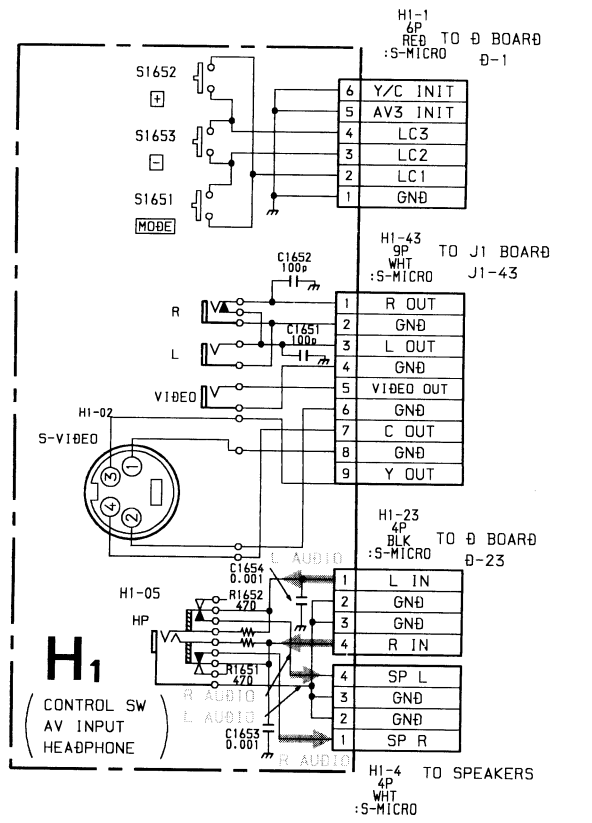
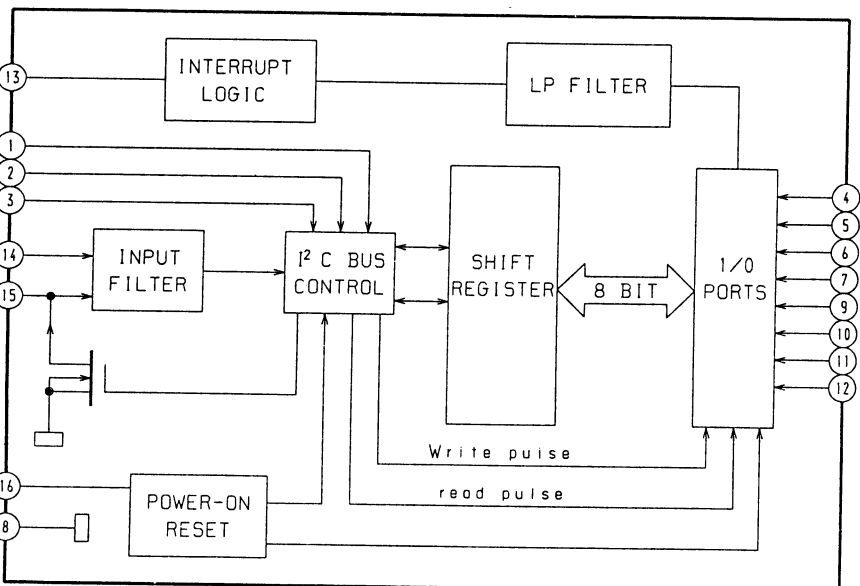
— A Board —

IC103	PCF8574	EXPANDER
Q113	2SC2412K	AUDIO AMP
Q114	2SC2412K	AUDIO AMP
Q115	2SC2412K	AUDIO AMP
Q116	2SC2412K	AUDIO AMP
Q125	DTA144ES	MUTE SW
Q126	DTA144EK	MUTE SW
Q181	2SC2412K	NICAM BUFFER

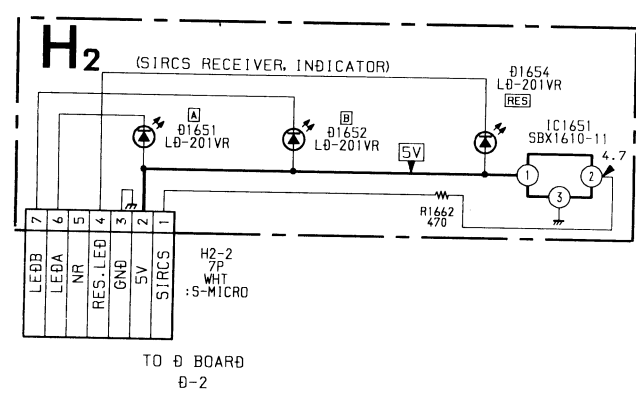
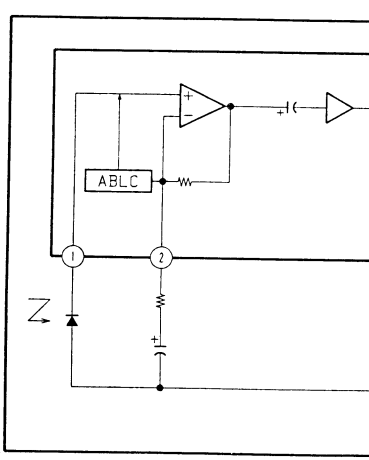
— A Board —



A BOARD IC103 PCF8574



H2 BOARD IC1651 SBX1610-11



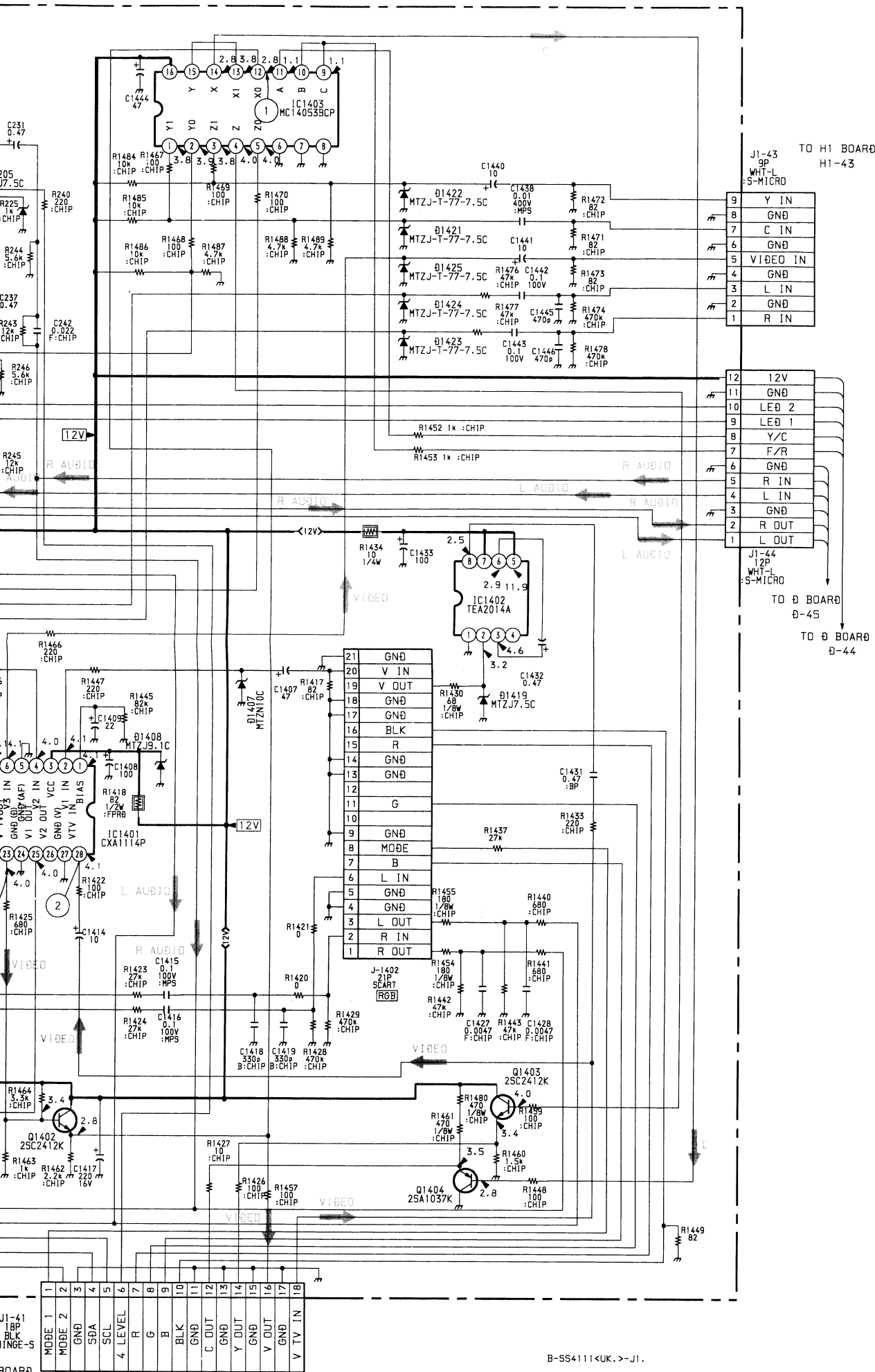
— H2 Board —

IC1651	SBX1610-11	INFRARED RECIVER
Q1651	L0-201VR	AUDIO CHANNEL A INDICATOR
Q1652	L0-201VR	AUDIO CHANNEL B INDICATOR
Q1654	L0-201VR	RESET INDICATOR





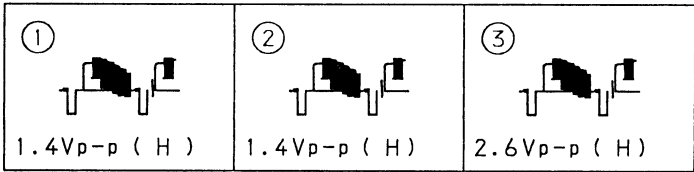




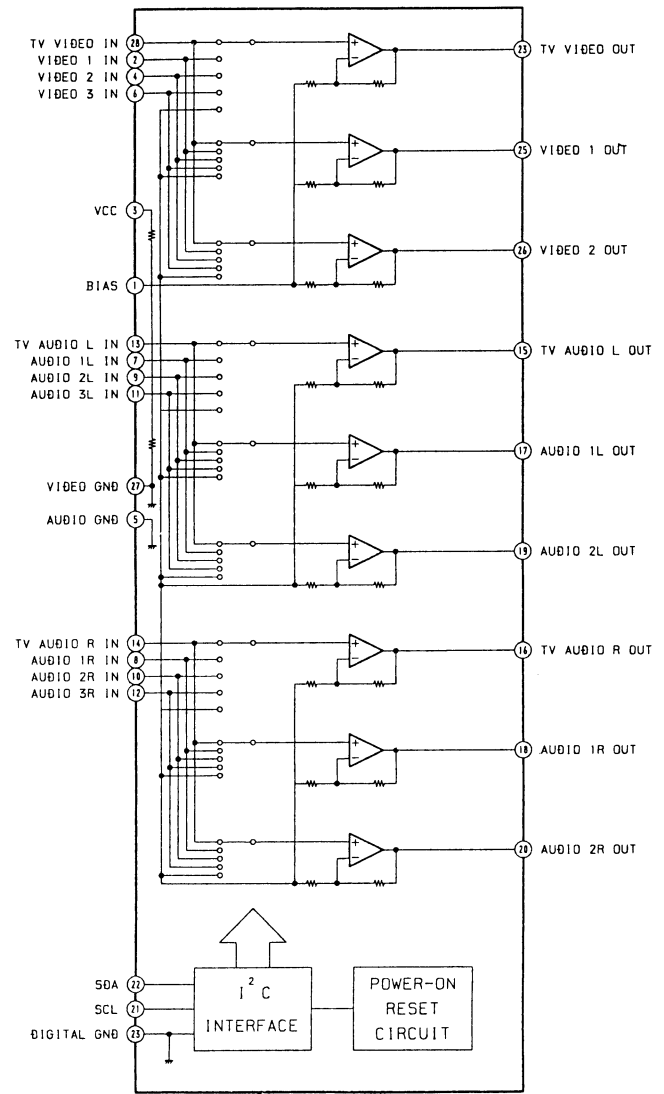
— J1 Board —

IC201	T0A6200	AUDIO CONTROL
IC1401	CXA1114P	AV SW
IC1402	TEA2014A	SCART VIDEO OUT
IC1403	MC14053BCP	COMPOSITE Y/C SW
IC1501	TEA2031A	EAST-WEST CORRECTION
Q201	2SC2412K	AUDIO R BUFF
Q202	2SC2412K	AUDIO L BUFF
Q1401	2SA1037K	VIDEO OUT
Q1402	2SC2412K	VIDEO OUT BUFF
Q1403	2SC2412K	Y OUT BUFF
Q1404	2SA1037K	C OUT BUFF
D201	MTZJ-T-77-9.1C	PROTECT
D202	MTZJ-T-77-9.1C	PROTECT
D205	MTZJ-T-77-7.5C	PROTECT
D206	MTZJ-T-77-7.5C	PROTECT
D1401	MTZJ-T-77-7.5C	PROTECT
D1403	MTZJ-T-77-7.5C	PROTECT
D1404	MTZJ-T-77-7.5C	PROTECT
D1405	MTZJ-T-77-7.5C	PROTECT
D1406	MTZJ-T-77-7.5C	PROTECT
D1407	MTZN-T-77-10C	PROTECT
D1408	MTZJ-T-77-9.1C	REG
D1409	MTZJ-T-77-9.1C	PROTECT
D1410	MTZJ-T-77-9.1C	PROTECT
D1415	MTZJ-T-77-7.5C	PROTECT
D1418	MTZJ-T-77-7.5C	PROTECT
D1419	MTZJ-T-77-7.5C	PROTECT
D1420	MTZJ-T-77-7.5C	PROTECT
D1421	MTZJ-T-77-7.5C	PROTECT
D1422	MTZJ-T-77-7.5C	PROTECT
D1423	MTZJ-T-77-7.5C	PROTECT
D1424	MTZJ-T-77-7.5C	PROTECT
D1425	MTZJ-T-77-7.5C	PROTECT
D1426	MTZJ-T-77-7.5C	PROTECT
D1501	RGP10GPKG23	PROTECT
D1502	1SS133	DECOUPLING H SIZE
D1503	1SS133	CLIPPING V PARABORA
D1504	1SS133	CLIPPING H PULSE
D1505	1SS133	REG
D1506	MTZJ-T-77-36D	PROTECT
D1507	1SS133	PROTECT
D1510	1SS133	REG

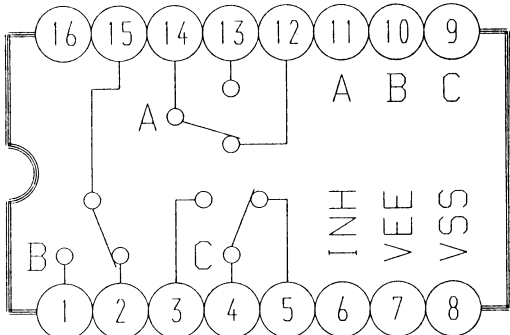
— J1 Board —



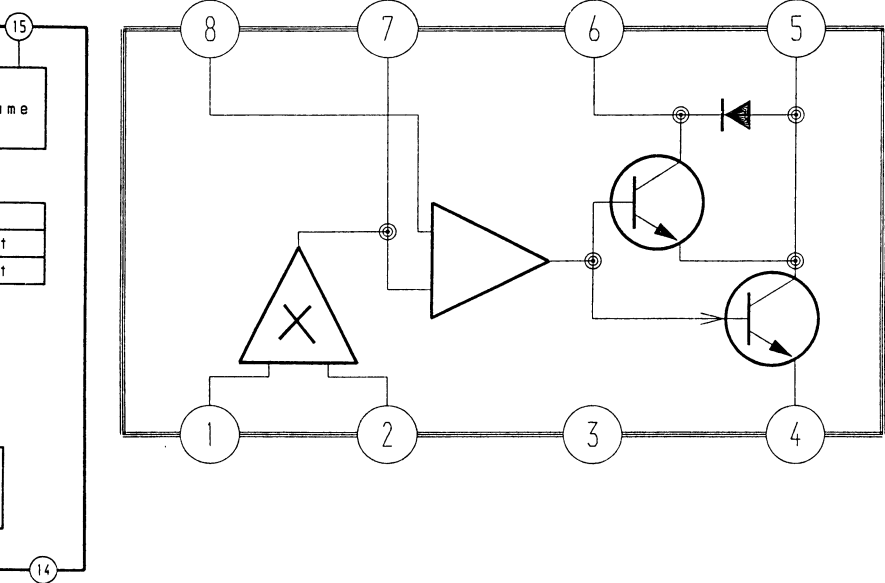
J1 BOARD IC1401 CXA1114P



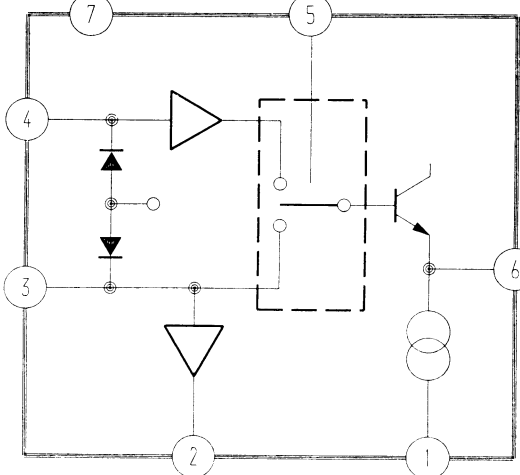
J1 BOARD IC1403 MC14053BCP



J1 BOARD IC1501 TEA2031A



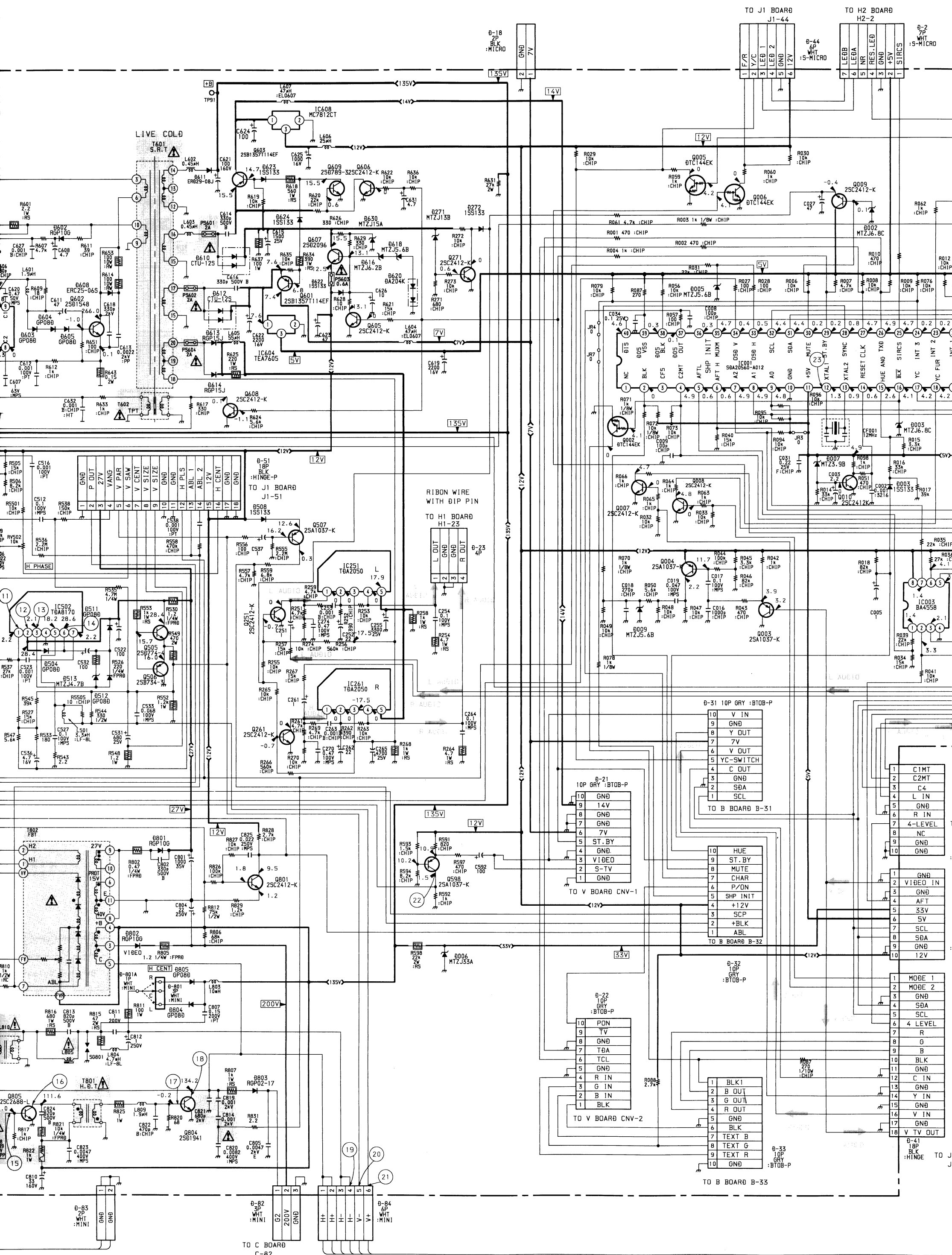
J1 BOARD IC1402 TEA2014A





— 37 —







0001	MTZJ6.8C	PROTECT
0002	MTZJ6.8C	PROTECT
0003	1SS133	HUE CTL
0005	MTZJ5.6B	PROTECT
0006	MTZJ33A	VC VOLTAGE REGULATION
0007	MTZJ3.9B	PROTECT RESET
0009	MTZJ5.6B	CLIPPING SYNC LEVEL
0010	MTZJ6.2B	PROTECT
0011	MTZJ6.2B	PROTECT
0012	1SS133	PROTECT
0013	MTZJ6.8C	PROTECT
0271	MTZJ13B	VOLTAGE DETECT
0272	1SS133	DECOUPLING MUTE AU010
0501	1SS133	SOFT START
0504	GP080PKG23	V PULSE OUT
0506	0A204K	CURRENT REG
0508	1SS133	CANAL +BLK LEVEL
0509	1SS133	V LIN
0511	GP080PKG23	PROTECT
0512	GP080PKG23	PROTECT
0513	MTZJ4.7B	PROTECT
0601	04SB60L-F	AC RECT
0602	RGP10GPKG23	REF RECT
0603	GP080PKG23	SMPS DRIVE 1
0604	GP080PKG23	SMPS DRIVE 2
0605	GP080PKG23	SMPS DRIVE 3
0606	RGP10GPKG23	+12V RECT
0607	RGP10GPKG23	REF RECT
0608	ERC25-06S	PLUSE CLIPPER
0609	MTZJ33A	FAST ON/OFF
0610	CTU-12S	+14V RECT
0611	ER029-08J	+135V RECT
0612	CTU-12S	+7V RECT
0613	RGP15J-6040G23	AF V RECT-1
0614	RGP15J-6040G23	AF V RECT-2
0616	MTZJ6.2B	+12V REG
0617	1SS133	PROTECT
0618	MTZJ5.6B	+12V REF
0619	MTZJ33A	FAST ON/OFF-2
0620	0A204K	+12V REF
0621	MTZJ33A	FAST ON/OFF-3
0622	1SS133	PROTECT
0623	1SS133	DECOUPLING STBY
0624	1SS133	DECOUPLING 0TBY
0630	MTZJ15A	+12V RECT
0801	RGP10GPKG23	+27V RECT
0802	RGP10GPKG23	+200V RECT
0803	RGP02-17PKG23	G2 RECT
0804	GP080PKG23	H CENTER-1
0805	GP080PKG23	H CENTER-2
0806	ERC06-15S	H 0AMPER-1
0807	ERC06-15C	H 0AMPER-2
0808	ER028-08S	PIN 0AMPER



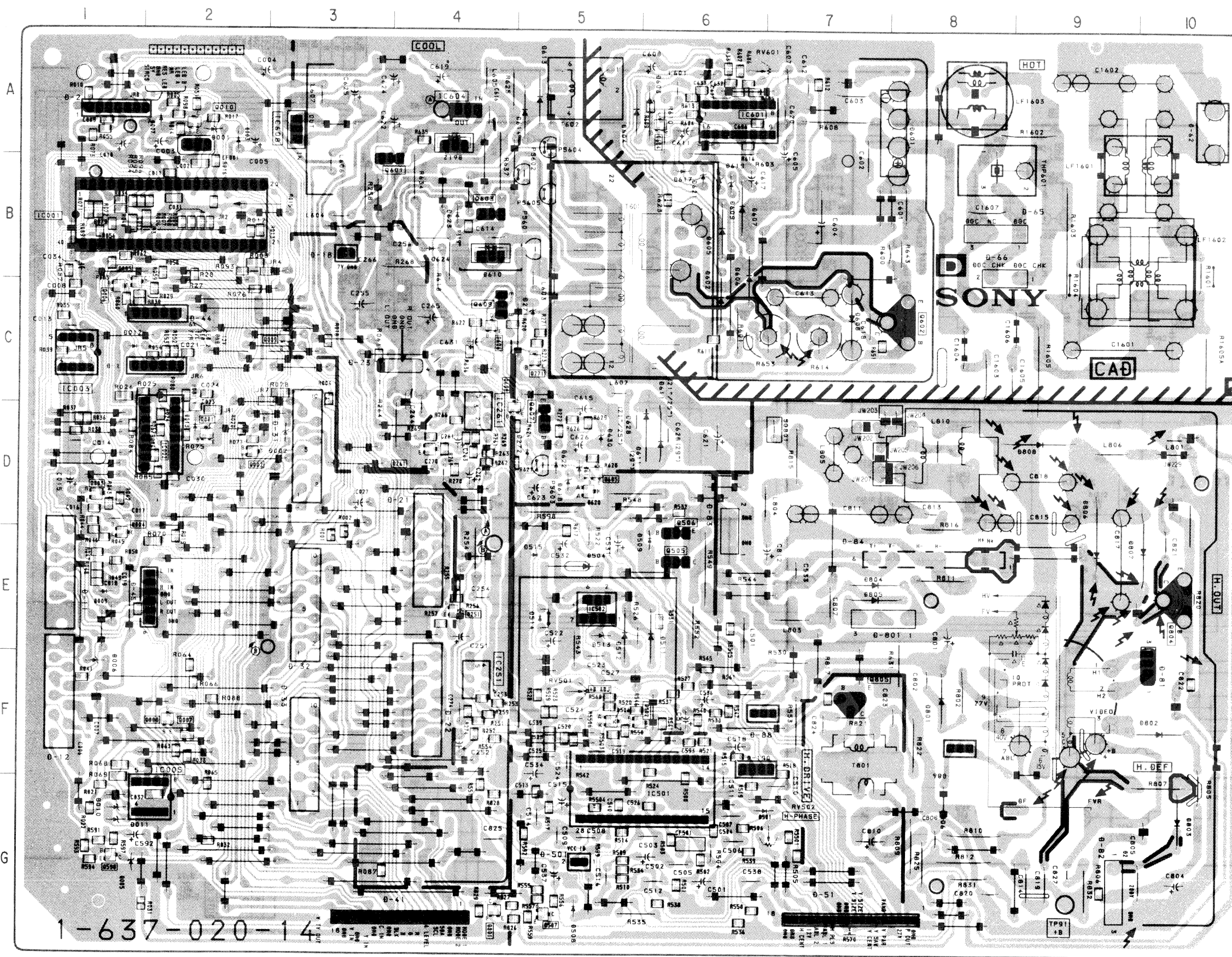
D

[TUNING CONTROL, POWER CONTROL,  
AUDIO OUT, H/V OUT]

— D Board —

KV-H2511D  
MDR-IF310/RM-816

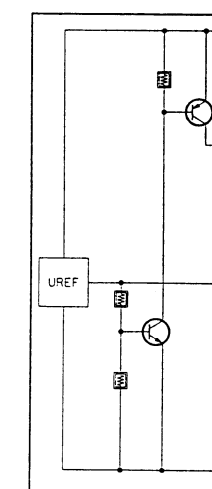
KV-H2511D  
MDR-IF310/RM-816



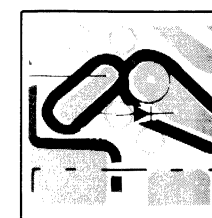
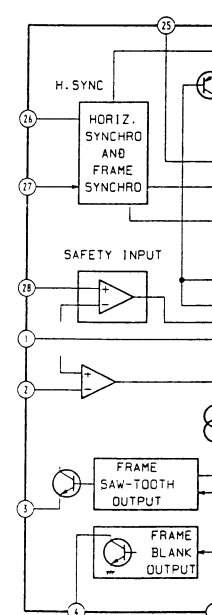
— D Board —

IC		D012 C-1	
IC001	B-2	D013	D-2
IC002	D-2	D271	C-5
IC003	C-1	D272	D-5
IC005	G-2	D501	G-7
IC251	F-4	D504	E-5
IC261	D-4	D506	F-5
IC501	G-6	D508	G-5
IC502	E-5	D509	E-6
IC601	A-6	D511	E-6
IC604	A-4	D512	E-5
IC608	A-3	D513	E-5
TRANSISTOR		D514	E-5
Q001	D-2	D515	E-5
Q002	D-2	D601	A-8
Q003	D-1	D602	C-6
Q004	E-1	D603	A-6
Q005	C-1	D604	A-5
Q006	C-1	D605	B-6
Q007	F-2	D606	B-6
Q008	F-2	D607	B-6
Q009	C-3	D608	C-7
Q010	A-2	D609	B-6
Q251	E-4	D610	B-4
Q261	D-4	D611	D-6
Q271	C-5	D612	A-4
Q502	F-6	D613	A-5
Q505	E-6	D614	A-5
Q506	D-6	D616	D-5
Q507	G-5	D617	B-6
Q598	G-1	D618	D-5
Q601	B-3	D619	B-6
Q602	C-8	D620	D-5
Q603	B-4	D621	B-6
Q604	A-6	D622	D-5
Q605	D-5	D623	B-4
Q606	C-4	D624	B-4
Q607	D-5	D630	D-5
Q608	D-4	D801	F-8
Q609	C-4	D802	F-10
Q801	G-4	D803	G-10
Q804	E-10	D804	E-7
Q805	F-7	D805	E-7
DIODE		D806	E-9
D001	A-2	D807	E-10
D002	D-3	D808	D-9
D003	A-2	VARIABLE RESISTOR	
D005	G-1	RV501	F-5
D006	F-1	RV502	G-7
D007	A-2	RV601	A-6
D009	E-1	TP	
D010	G-1	TP91	G-9
D011	G-1		

D BOARD IC25

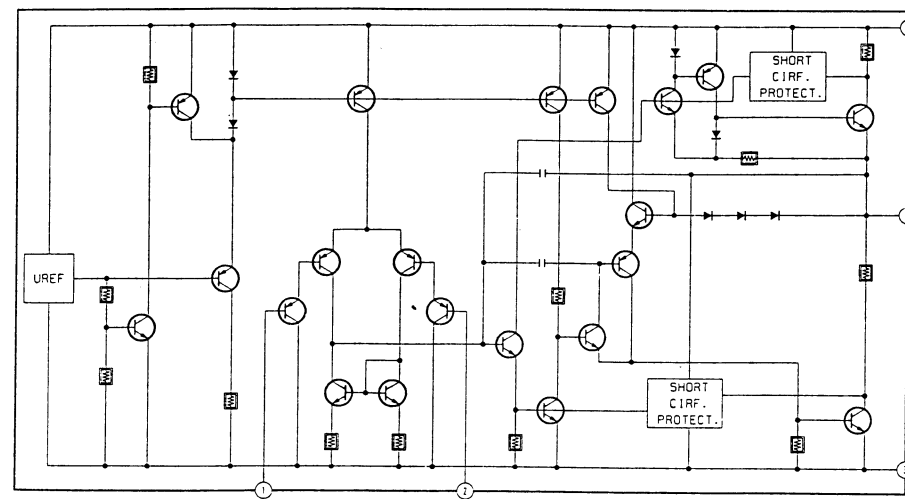


D BOARD IC50

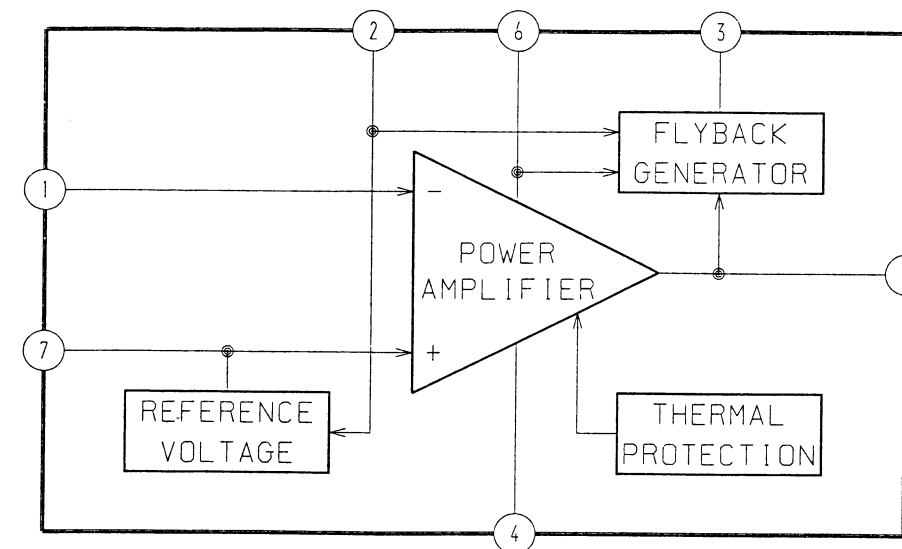




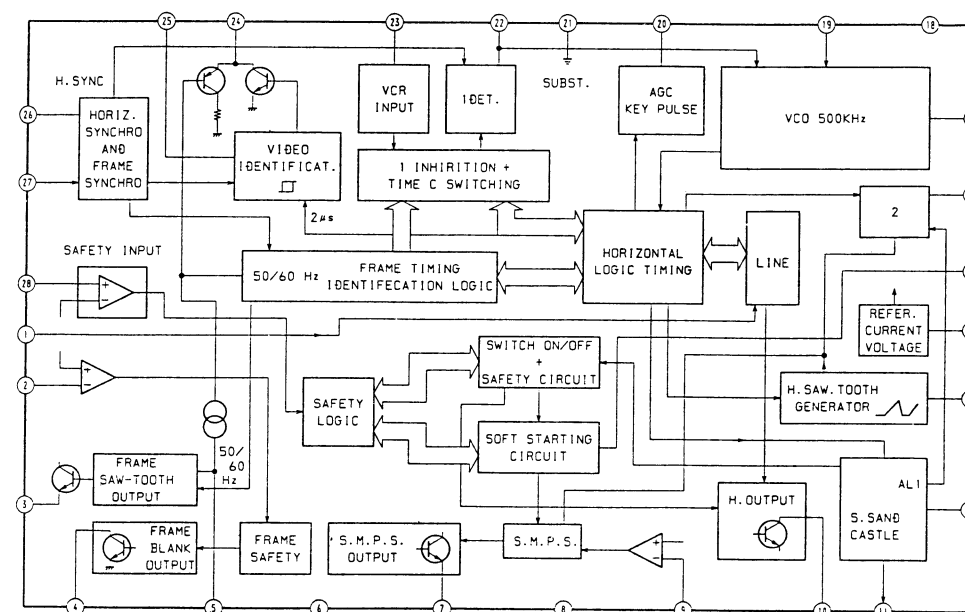
D BOARD IC251, IC261 TDA2050



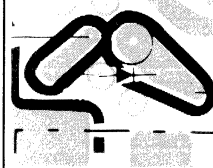
D BOARD IC502 TDA8170



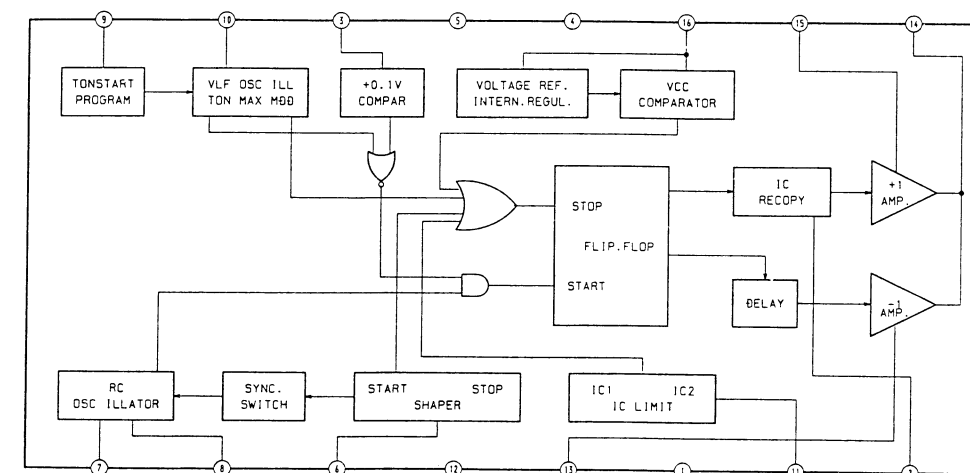
D BOARD IC501 TEA2028B

**NOTE:**

The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.

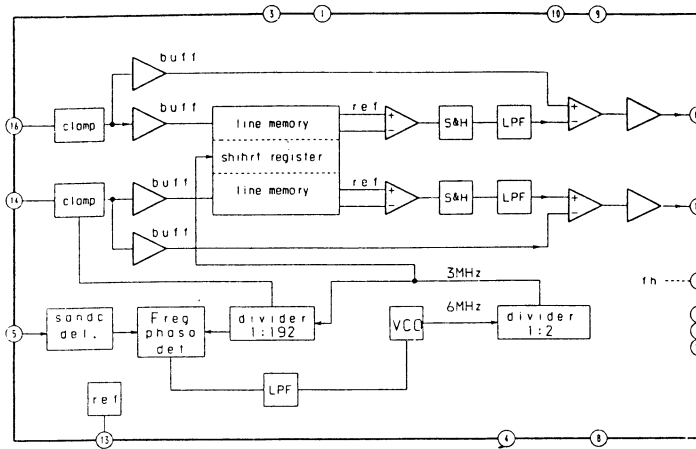


D BOARD IC601 TEA2260

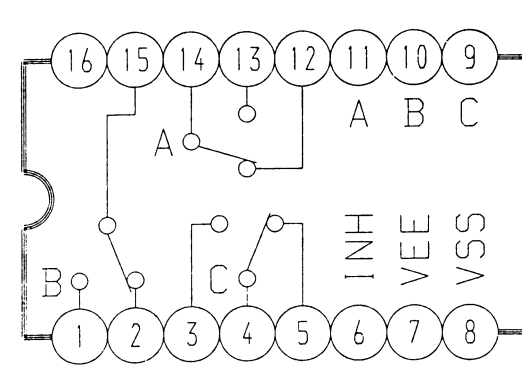




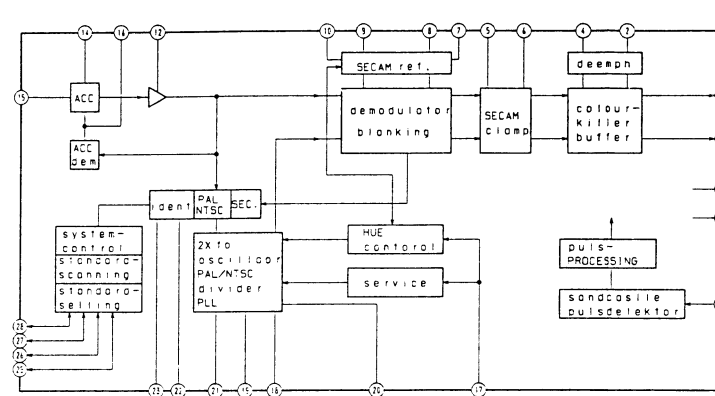
B BOARD IC332 TDA4660V2



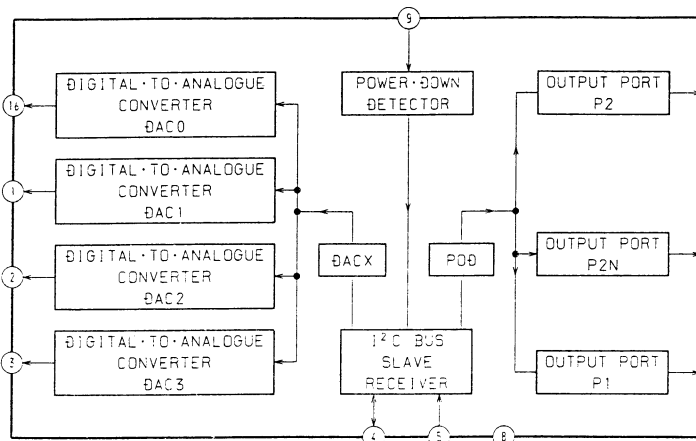
B BOARD IC303 MC14053BCP



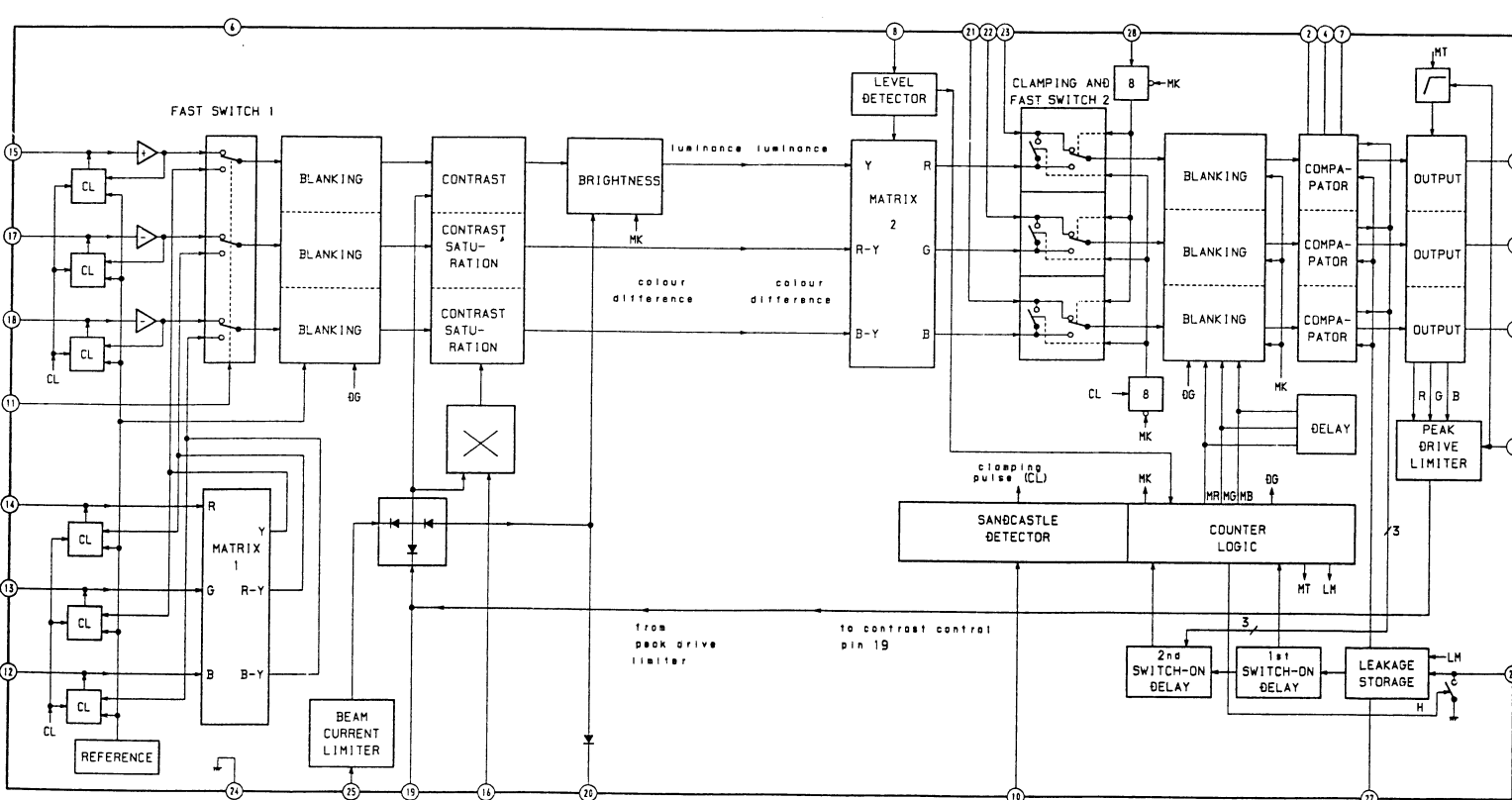
B BOARD IC331 TDA4650



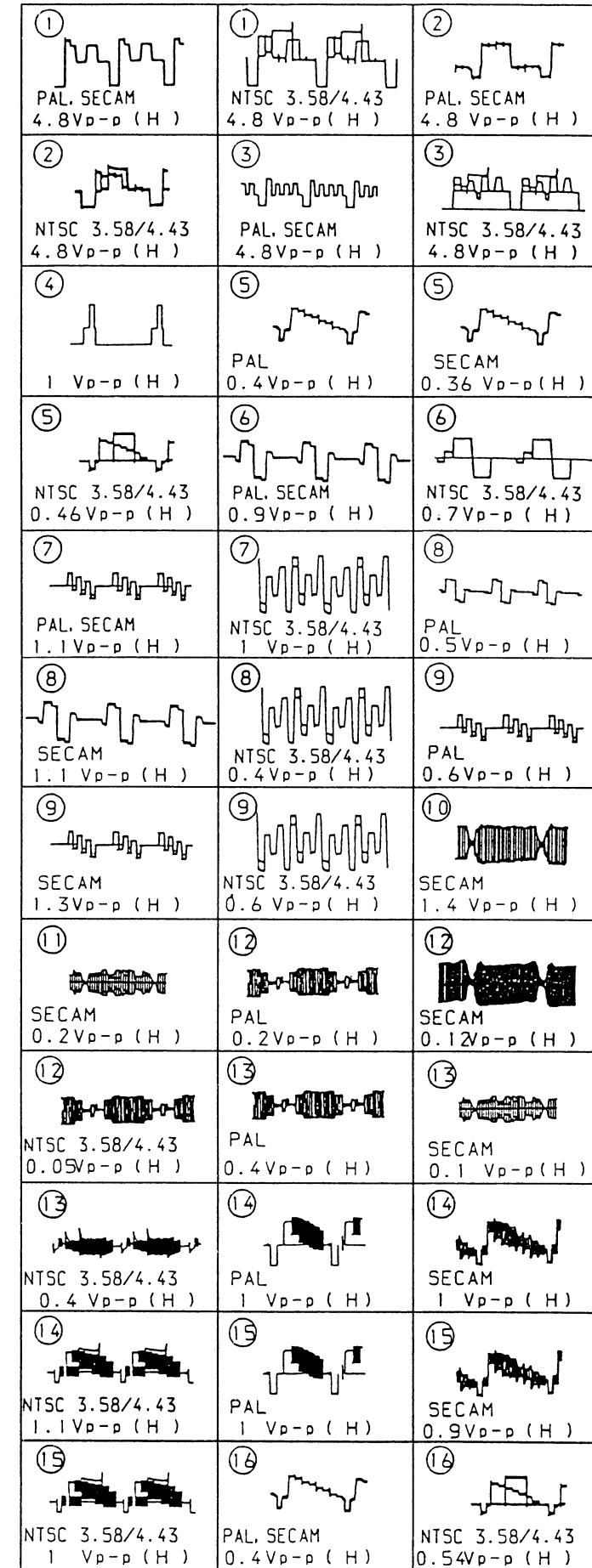
B BOARD IC302 TDA8442-N3



B BOARD IC301 TDA4580-V7



— B Board —



— B Board —

IC301	TDA4580-V7	VIDEO PROCESSOR
IC302	TDA8442-N3	D/A CONVERTER IC BUS
IC303	MC14053BCP	Y/C COMP SW
IC331	TDA4650-V4	COLOR PROCESSOR
IC332	TDA4660V2	1H-DELAY
Q301	2SC2412K	Y BUFFER
Q303	2SC2412K	STBY SW
Q305	0TA144EK	ANTI PRIORITY SCART
Q306	JC501TP	VIDEO BUFF
Q311	2SC2412K	ON SCREEN DISPLAY SW
Q312	2SC2412K	CANAL +BLK
Q313	2SC2412K	ON SCREEN DISPLAY
Q316	2SC2412K	FAS PICTURE MUTE SW
Q330	2SA1037K	VIDEO AMP
Q331	0TC124EK	NTSC SW
Q332	2SA1037K	VIDEO BUFF
Q333	2SA1037K	Y AMP
Q334	2SC2412K	PAL/NTSC SW
Q335	2SC2412K	SECAM SW
Q381	0TC124EK	MUTE
Q382	2SC2412K	ABL
Q1301	0TC124EK	Y BUFF
Q1306	2SC2412K	Y OUT
0301	1SS133	ACO AT STBY
0302	1SS133	ACO AT STBY
0303	1SS133	ACO AT STBY
0304	1SS133	DECOUPLING BLK
0305	1SS133	PROTECT
0307	MTZ11CJ	PROTECT
0309	1SS133	PROTECT
0310	MTZ11CJ	PROTECT
0311	MTZ11CJ	PROTECT
0312	MTZ11CJ	PROTECT
0313	1SS133	PROTECT
0314	1SS133	PROTECT
0315	1SS133	PROTECT
0316	1SS133	PROTECT
0317	1SS133	PROTECT
0318	1SS133	PROTECT
0319	1SS133	PROTECT
0320	1SS133	PROTECT
0331	1SS133	SECAM SW
0332	1SS133	SECAM SW
0333	1SS133	SECAM SW
0350	MTZ5.6CJ	PROTECT

— B Board —

As to the voltage value shown by the mark \* on the Schematic Diagram, see the another list.

	PAL	SECAM	NTSC3.58	NTSC4.43
IC301 (1)	0.1	0.1	5.8	0.1
(2)	6.7	6.8	5.1	5.1
IC331 (1)	3.1	3.6	3.1	2.8
(2)	3.0	3.5	2.9	2.7
(3)	5.6	5.6	7.1	7.2
(4)	7.5	7.0	5.6	5.6
(5)	0.1	0.1	0.1	5.8
(6)	0.1	0.1	5.8	0.1
(7)	0.1	5.8	0.1	0.1
(8)	5.9	0.1	0.1	0.1
Q331 (B)	0.1	0.1	5.8	0.1
(C)	1.5	1.9	0	0.8
Q333 (B)	3.4	4.4	4.4	4.4
Q334 (B)	4.9	0.1	4.8	4.8
Q335 (B)	0.1	4.8	0.1	0.1







B

[CHROMA DECOER]

V

[TEXT]

A

B

C

D

E

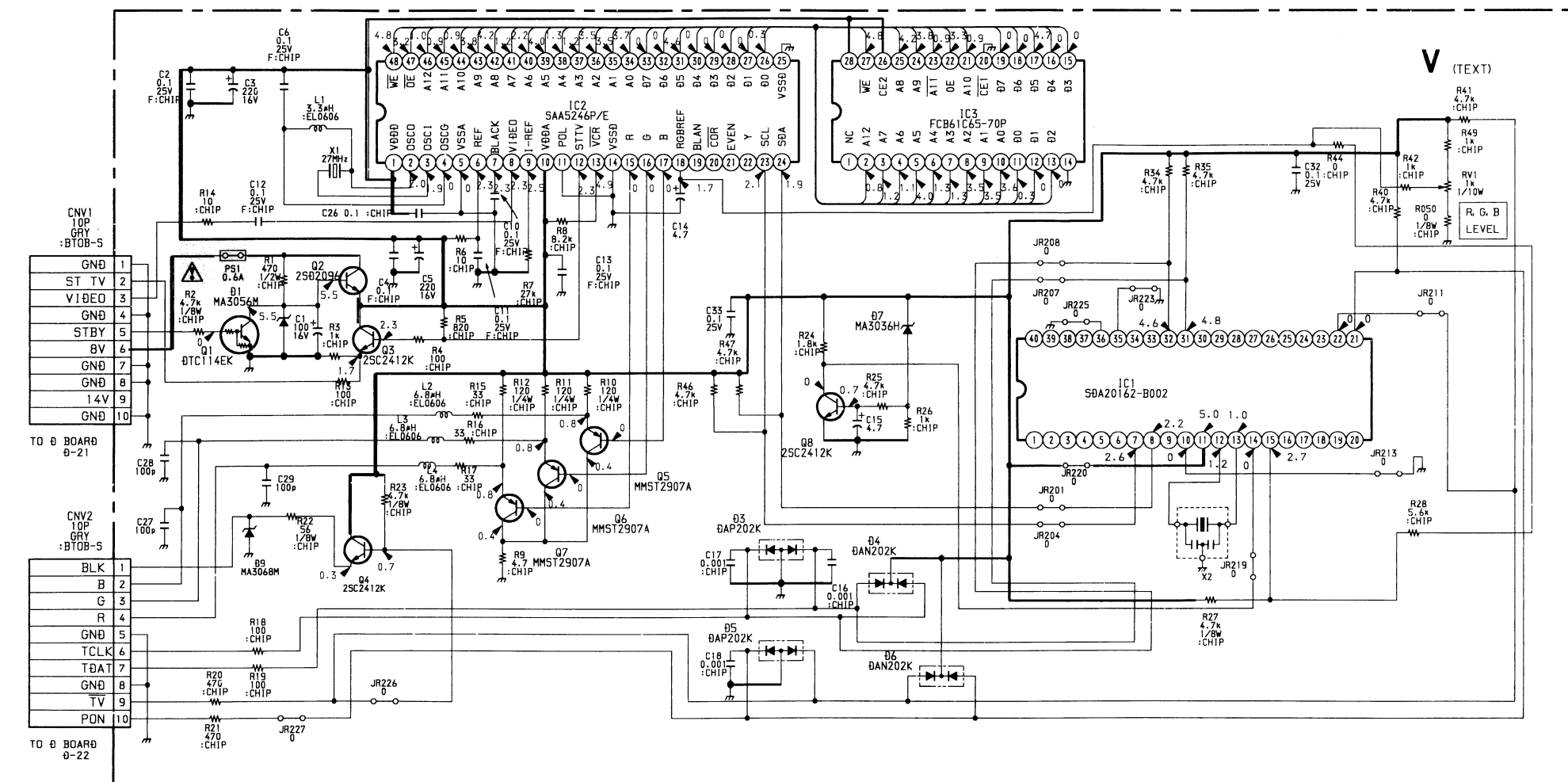
F

G

H

I

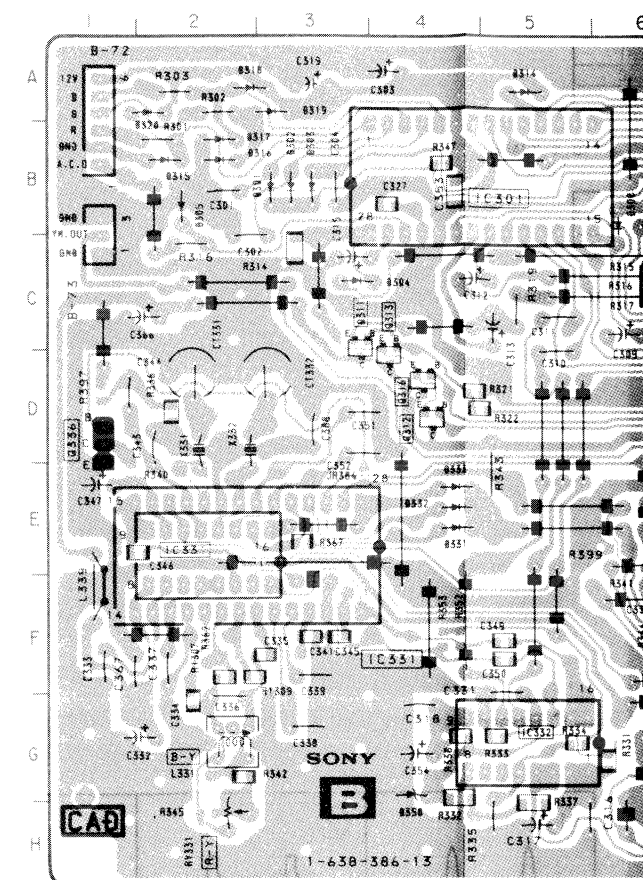
J



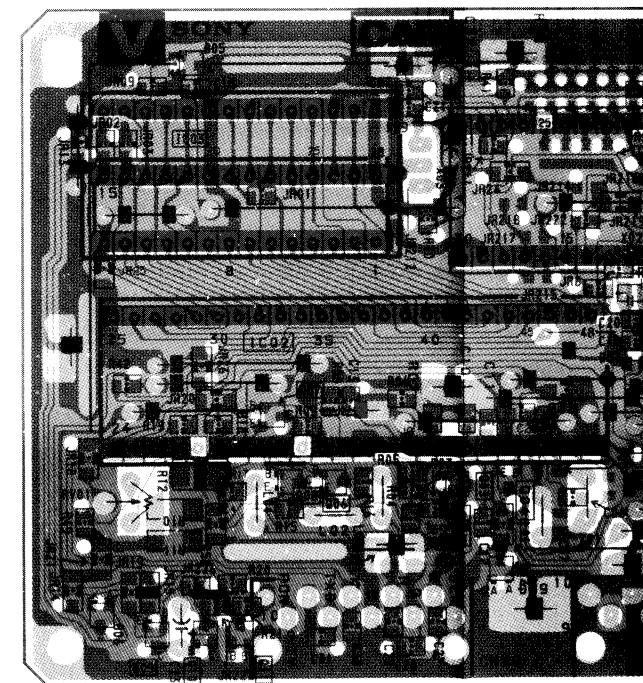
## — V Board —

IC1	S8A20162-B002	MICRO-CONT
IC2	SAA5246E	IVT
IC3	FCB61C65L-70P	STATIC-RAM
Q1	8TC114EK	STAND BY
Q2	2SD2096	5V REG
Q3	2SC2412K	SYNC BUFFER
Q4	2SC2412K	BLK OUT
Q5	MMST2907A	B OUT
Q6	MMST2907A	G OUT
Q7	MMST2907A	R OUT
Q8	2SC2412K	P ON SW
D1	MA3056M	5V REG
D3	8AP202K	PROTECT
D4	8AN202K	PROTECT
D5	8AP202K	PROTECT
D6	8AN202K	PROTECT
D7	MA3036H	PROTECT
D9	MA3068M	PROTECT

## — B Board —

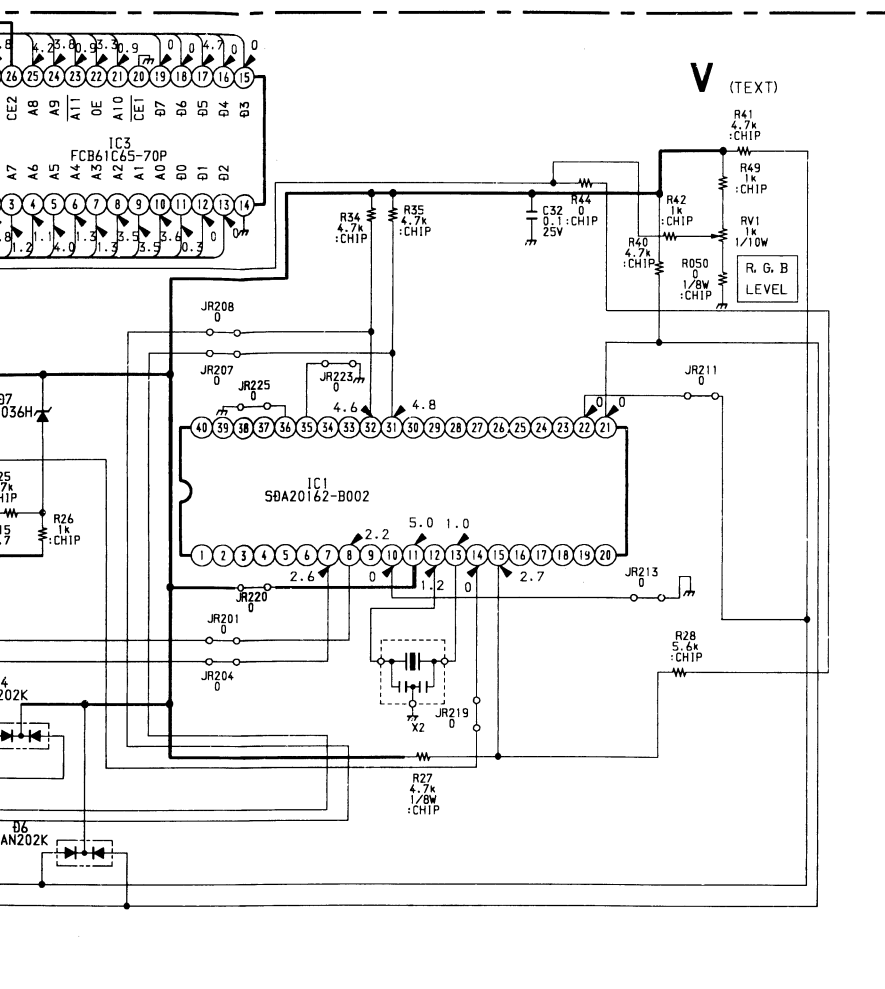


## — V Board —



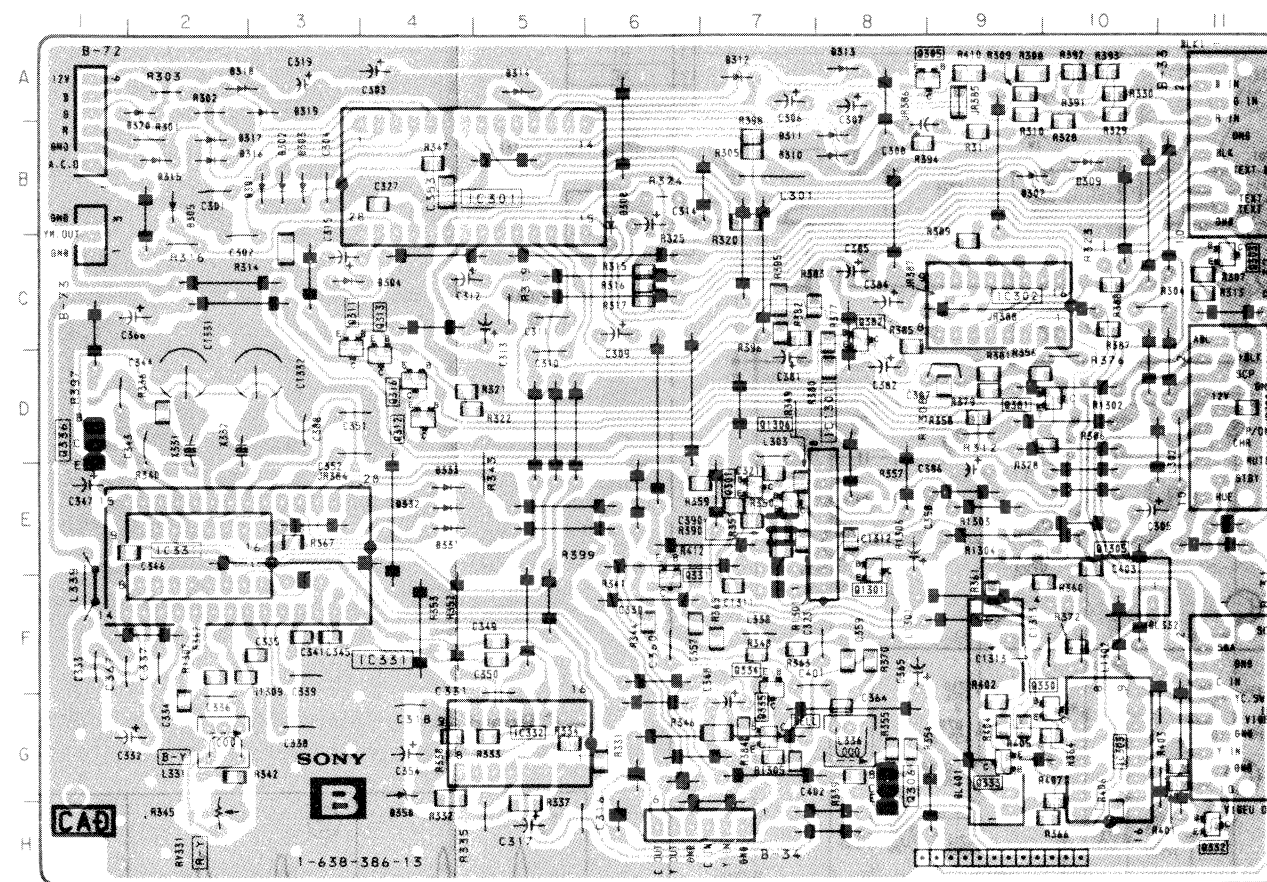
B-SS4112&lt;AEP&gt;-V..





B-SS4112<AEP>-V...

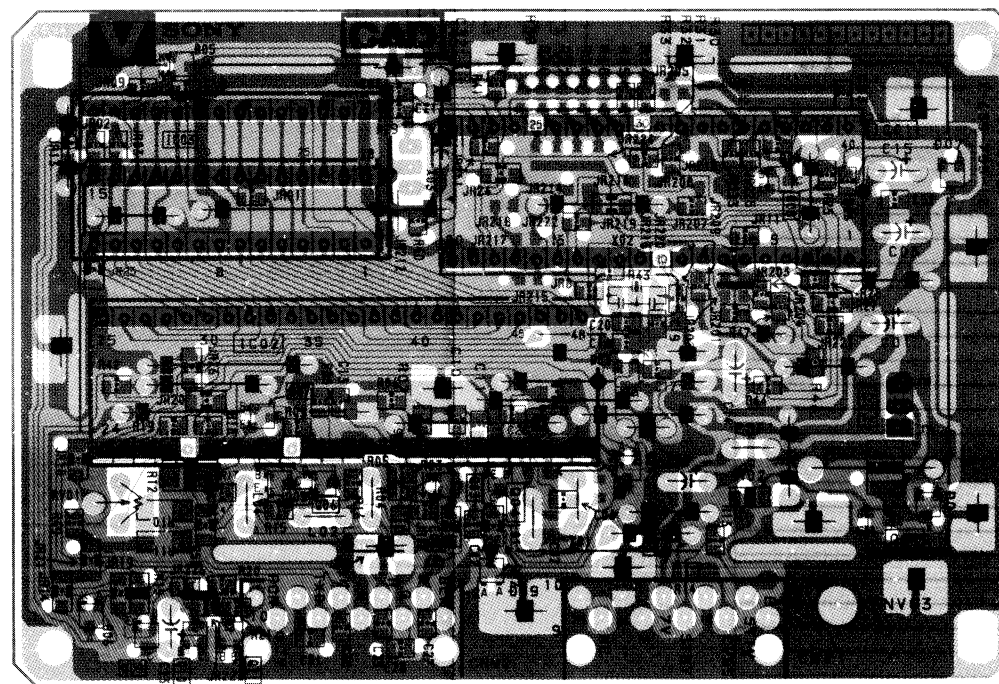
— B Board —



— B Board —

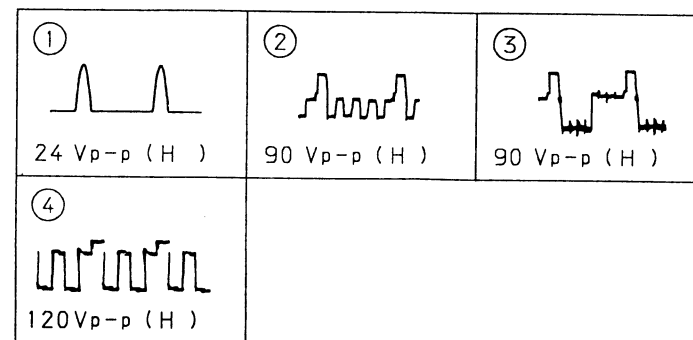
IC		D304	C-3
IC301	B-5	D305	B-2
IC302	C-9	D307	B-9
IC303	G-10	D309	B-10
IC331	E-2	D310	B-8
IC332	G-5	D311	B-8
		D312	A-7
		D313	A-8
		D314	A-5
		D315	B-2
		D316	B-2
		D317	B-2
		D318	A-2
		D319	A-3
		D320	A-2
		D331	E-4
		D332	E-4
		D333	E-4
		D350	G-4
TRANSISTOR		TRIMMER	
Q301	E-7	CT331	D-2
Q303	C-11	CT332	D-3
Q305	A-9		
Q306	G-9		
Q311	C-3	VARIABLE RESISTOR	
Q312	D-4	RV331	H-2
Q313	C-4		
Q316	D-4		
Q330	G-10		
Q331	F-6		
Q332	H-11		
Q333	G-9		
Q334	F-7		
Q335	G-8		
Q381	D-10		
Q382	C-8		
Q1301	E-8		
Q1306	E-7		
DIODE			
D301	B-3		
D302	B-3		
D303	B-3		

— V Board —



- : Pattern from the side which enables seeing.
- : Pattern of the rear side.



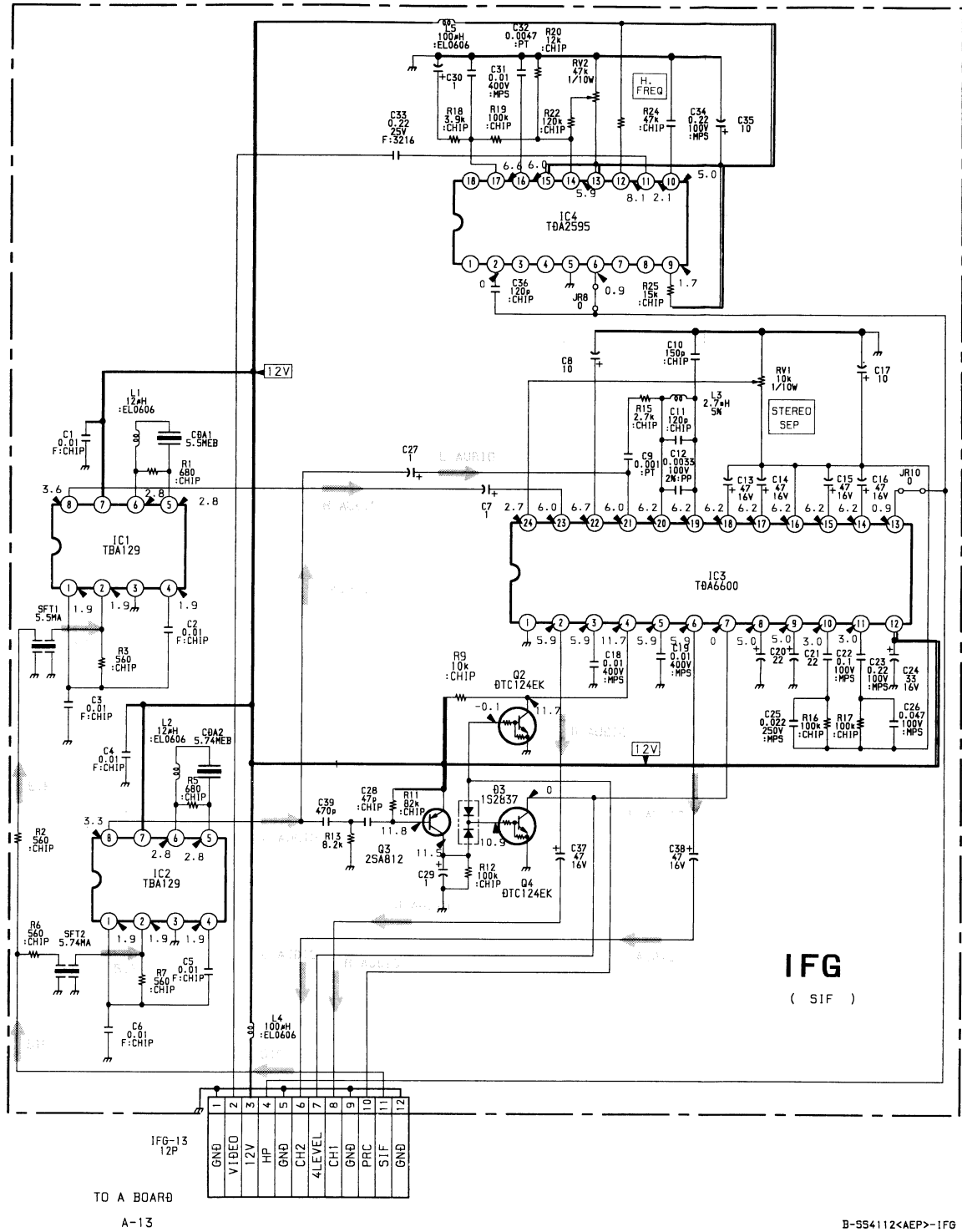
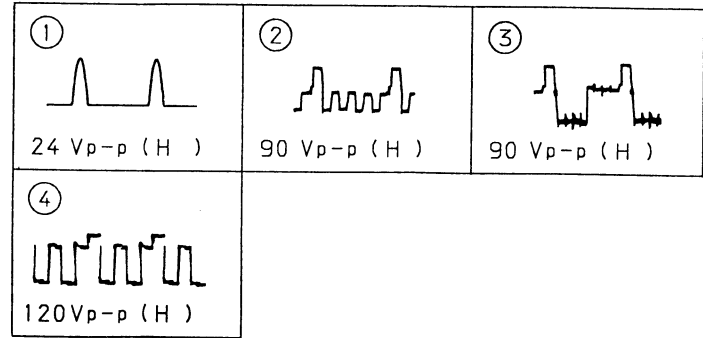


Q702	JC501	R ØRIVE
Q703	BF871	R OUT
Q704	2SA10910	ACO MEASURING
Q705	JC501	G ØRIVE
Q706	BF871	G OUT
Q707	2SA10910	ACO MEASURING
Q708	JC501	B ØRIVE
Q709	BF871	B OUT
Q710	2SA10910	ACO MEASURING
Ø701	MTZJ9.1C	PROTECT
Ø702	1SS133	PROTECT
Ø703	1SS133	PROTECT
Ø704	1SS133	PROTECT
Ø705	1SS133	PROTECT
Ø706	1SS133	PROTECT
Ø707	1SS133	PROTECT
Ø708	1SS133	PROTECT
Ø709	1SS133	PROTECT
Ø710	1SS133	PROTECT
Ø711	RGP10G	HEATING VOLTAGE REC
Ø713	1SS133	PROTECT



H1	
NC	
H2	
B1	
P	TO D BOARD
K	D-81
ICR0	
G2	
200V	
GN0	
I2	
I1	
N1	TO D BOARD
D-82	

— C Board —



— IFG Board —

IC1	TBA129	5.5 DET
IC2	TBA129	5.74DET
IC3	TDA6600	SIF DET AMP
IC4	TDA2595	H.FREQ AMP
Q2	2N4124	SW
Q3	2N4124	SW
Q4	2N4124	SW
D3	1S2837	SW



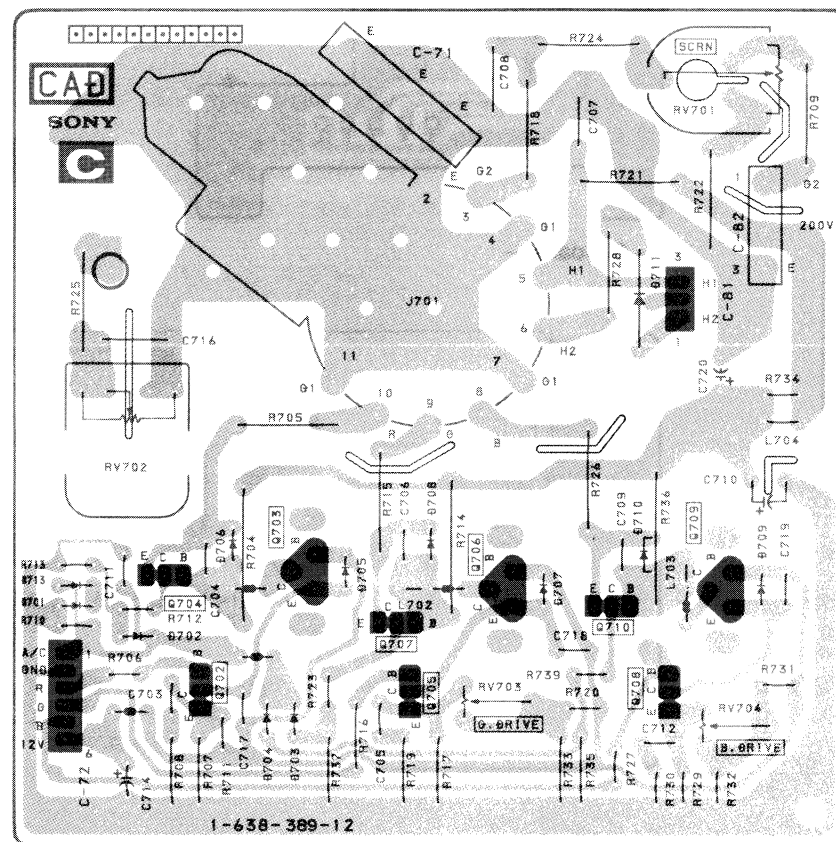
C

[R.G.B. OUT]

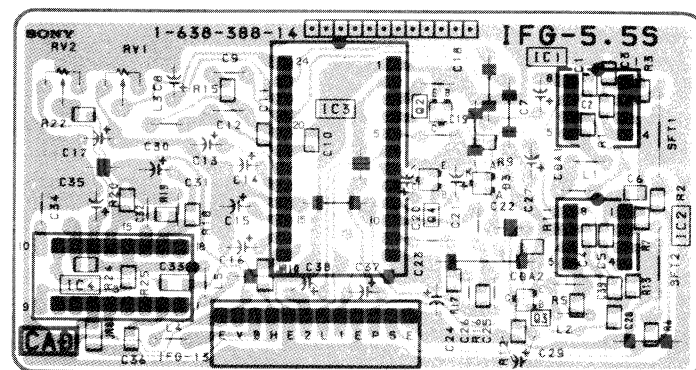
**IFG**

[SIF]

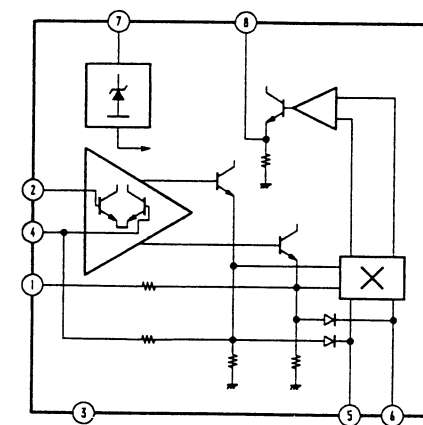
— C Board —



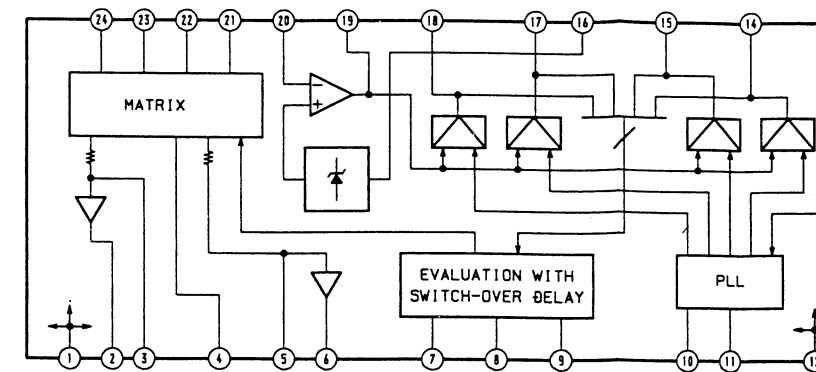
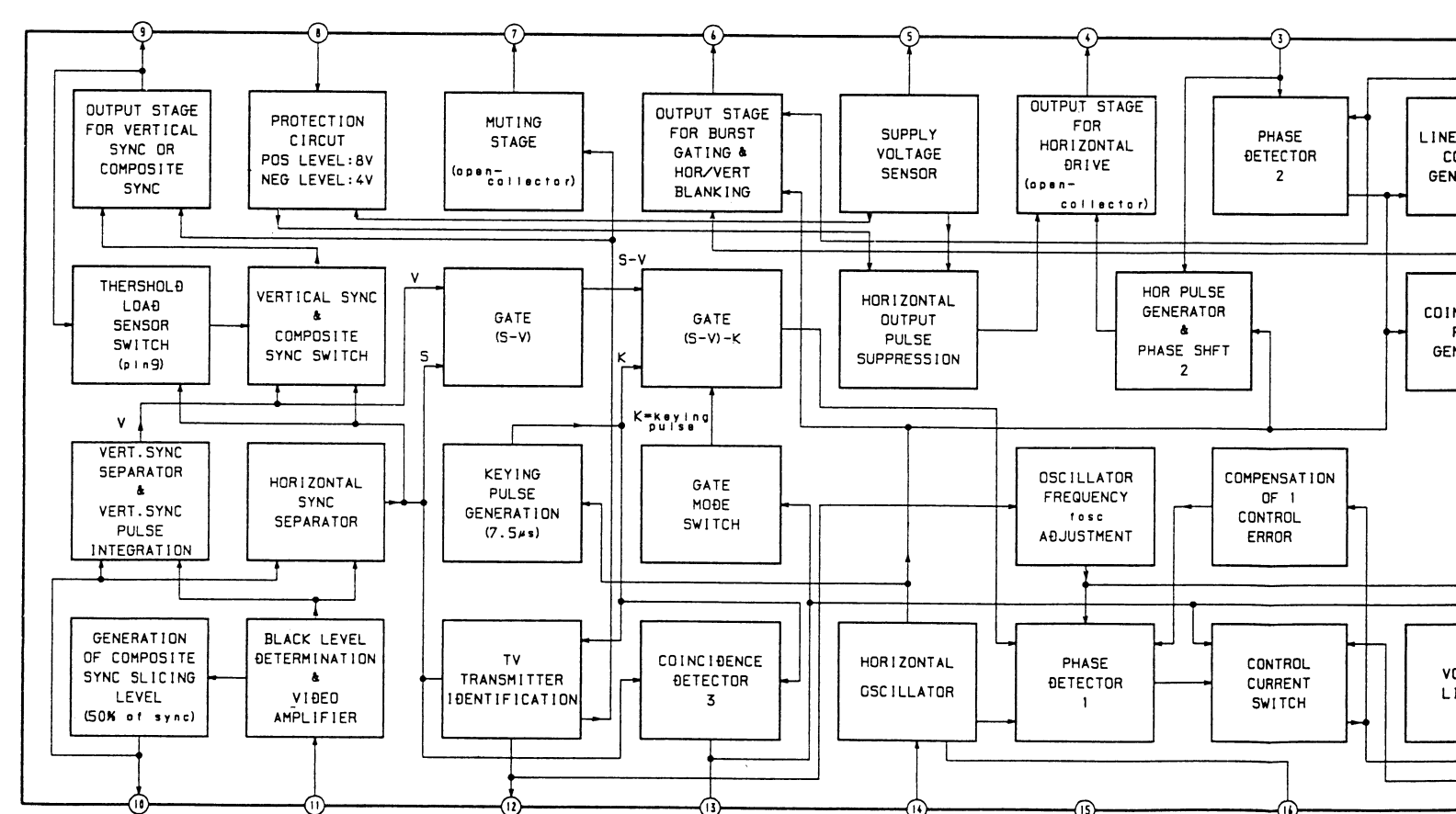
— IFG Board —



**IFG BOARD IC1, IC2 TBA129**

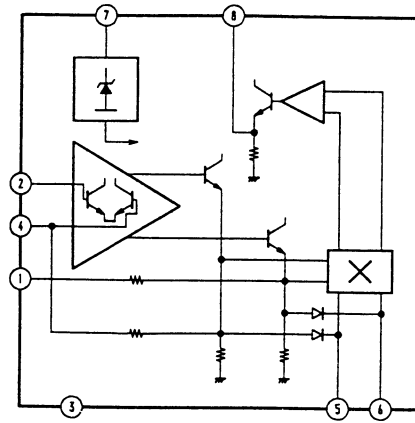


IFG BOARD IC3 TDA6600

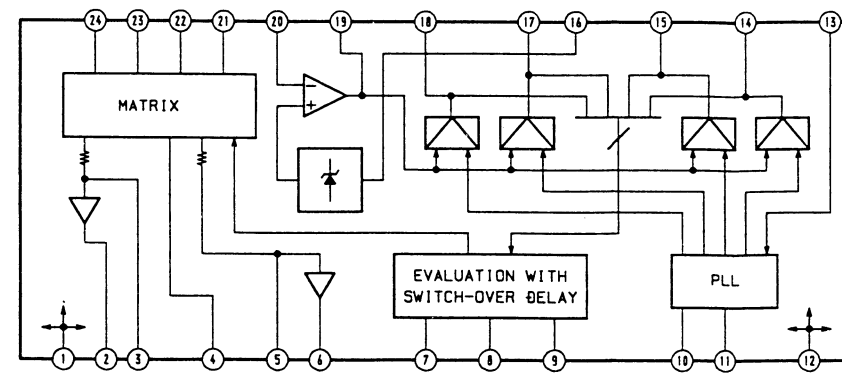
**IFG BOARD IC4 TDA2595**



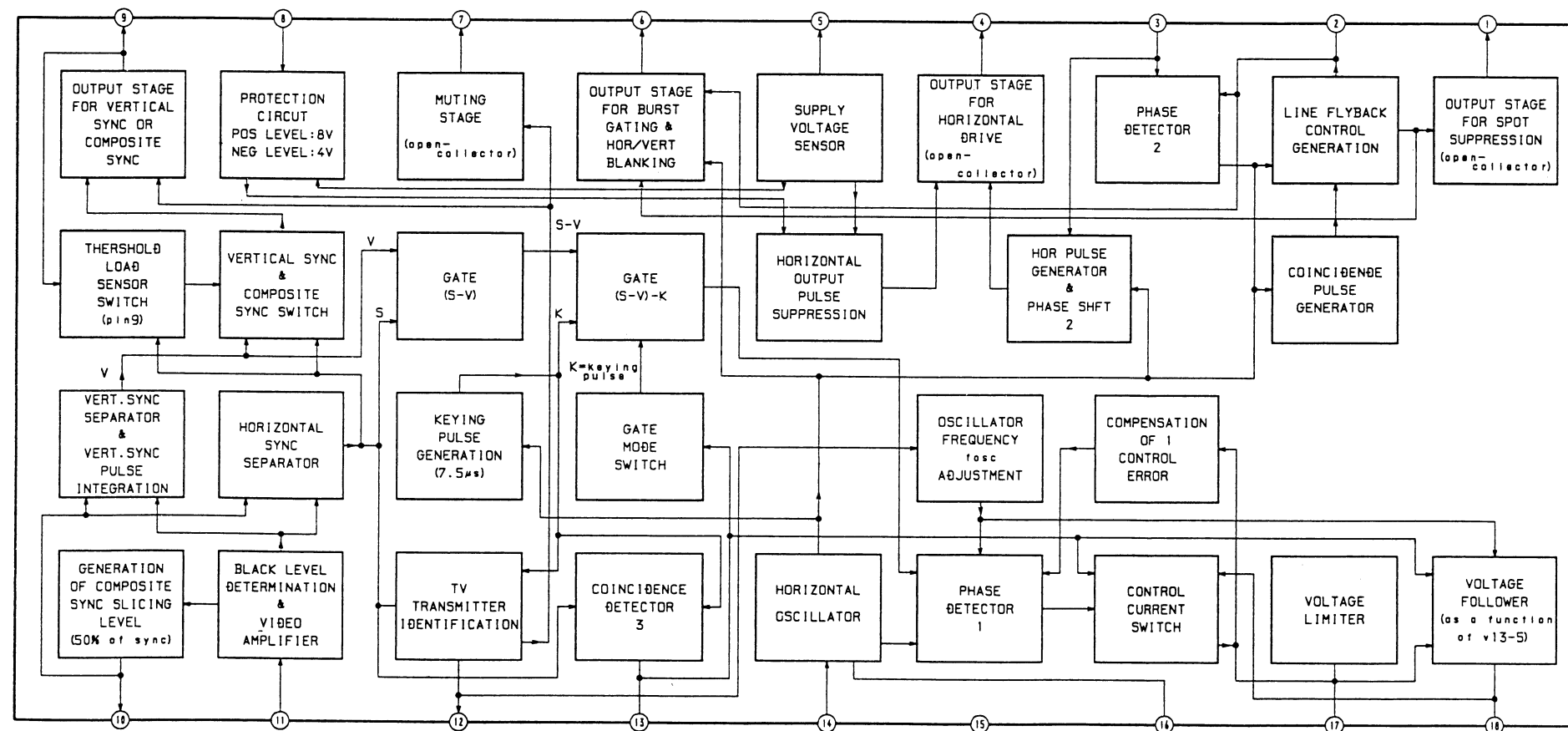
IFG BOARD IC1, IC2 TBA129



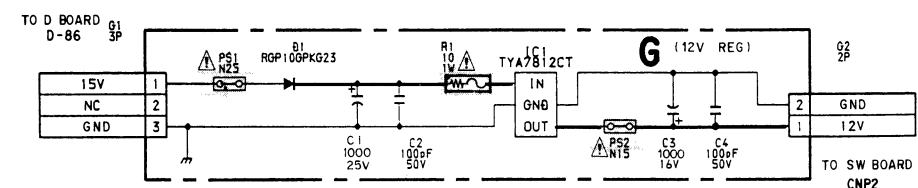
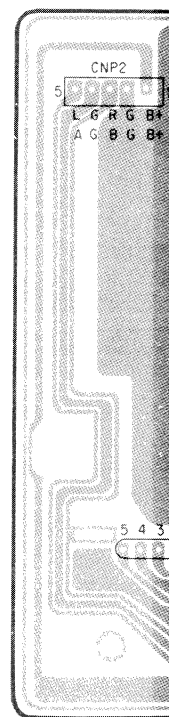
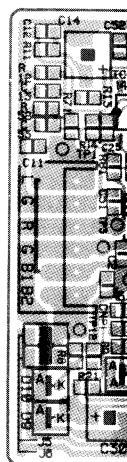
IFG BOARD IC3 TDA6600



IFG BOARD IC4 TDA2595









7 8 9 10 11 12 13 14 15

[MAIN BOARD]

Lch

Rch

12V

CH1  
OUT  
GND  
CH2  
OUT  
GND  
TO CH1 OF  
LEB BOARD  
TO CH2 OF  
LEB BOARD

MAIN

[MODULATOR]

SW

LED

[EMITTER]

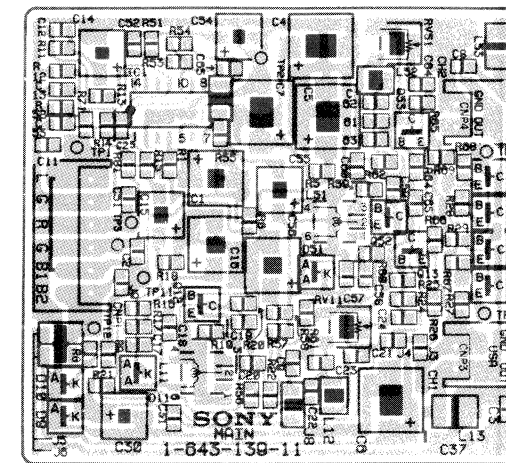
CN

[CONNECTOR]

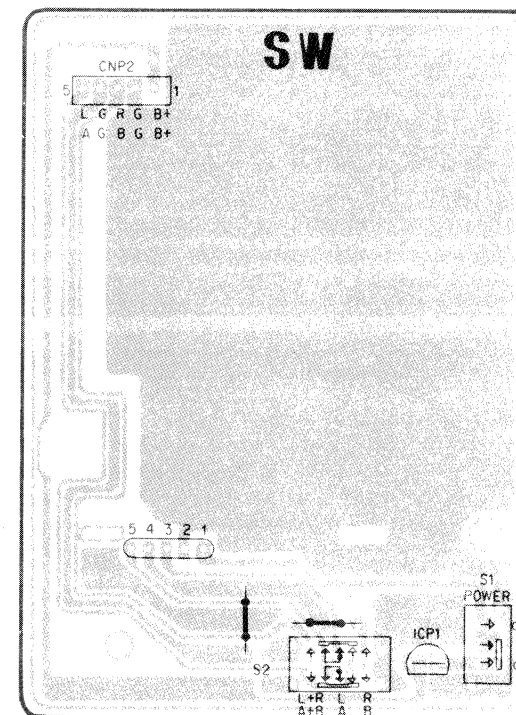
G

[12V REG]

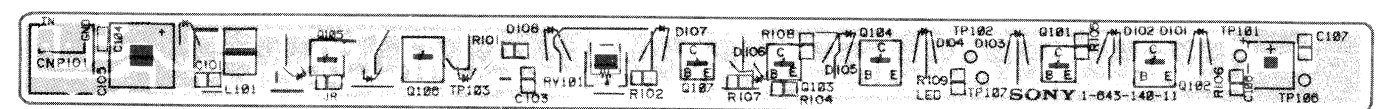
— MAIN Board —



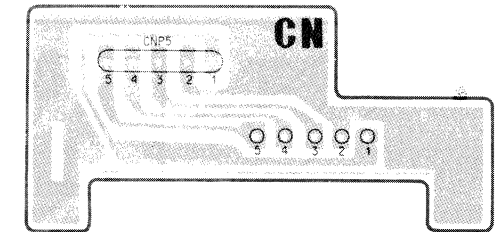
— SW Board —



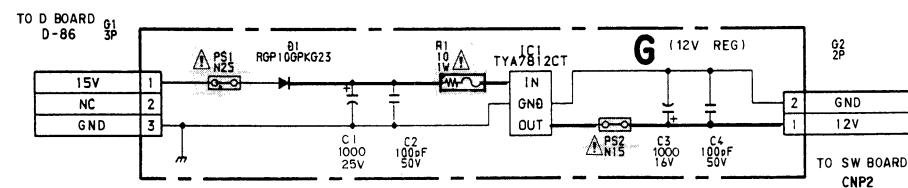
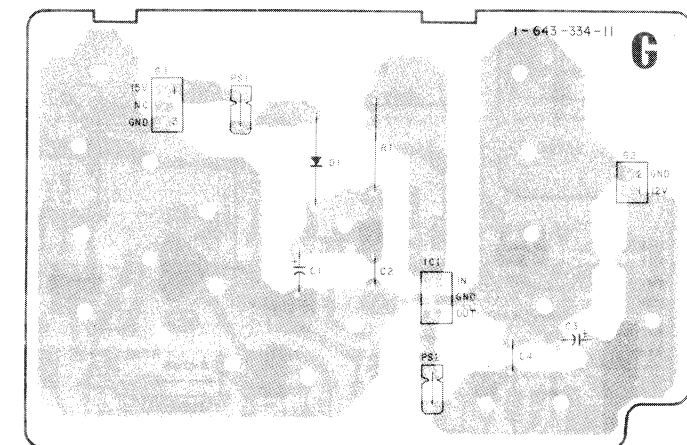
— LED Board —



— CN Board —



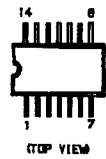
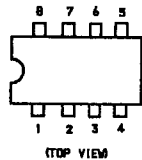
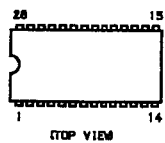
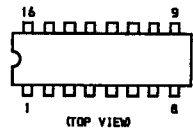
— G Board —



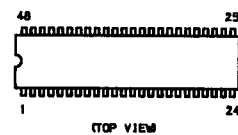


## 5-4. SEMICONDUCTORS

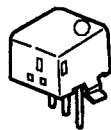
BA3308F

BA4558  
NE5532P  
RC4558P  
S0A2546  
TBA129  
T0A1543  
TEA2014A  
TEA2031ACXA1114P  
CXK5864BP-10L  
FCB61C65L-70P  
MAB8461P-W208  
SAA7280P/M3  
TC5565APL-15L  
T0A4580-V7  
T0A4650/V4  
T0A6200  
TEA2028BLM7812CT  
MC7812CT  
T0A8341/N6  
TEA7605  
TYA7812CTMC14051BCP  
MC14052BCP  
MC14053BCP  
PCF8574  
T0A2545A-V4  
T0A4510/V8  
T0A4660V2  
T0A8442-N3  
TEA2260  
#PD4053BC

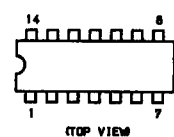
SAA5246P/E



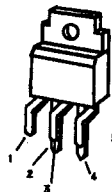
SBX1610-11

S0A20162-B002  
S0A20560-A012

SN74LS02N



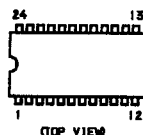
T0A2050



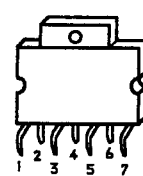
T0A2595/V9



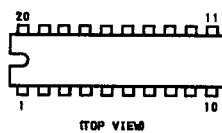
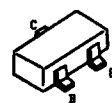
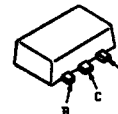
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T0A8170



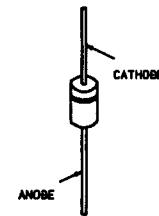
T0A8732

BF199  
2SA1091BF871  
2S0774-340TA144EK  
0TC114EK  
0TC124EK  
0TC144EK  
MMST2907A  
2SA1037K  
2SA1162  
2SA1623  
2SA812  
2SB1295  
2SC1623  
2SC2412K  
2SC2712  
2SC27140TA144ES  
0TC144ESJC501  
2SC27852SA1220A-P  
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2S01941-062S01664  
2S0999

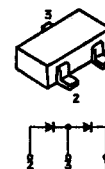
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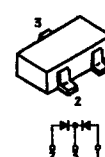
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BB405B  
BB809  
ERC06-15S  
ERC25-06S  
RGP10GPKG23  
RU-3AM

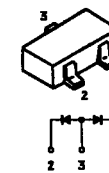
CTU-12S

0A204K  
1S5226

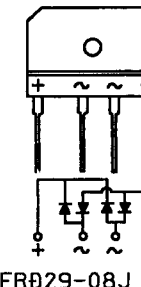
0AN202K



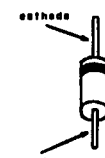
0AP202K



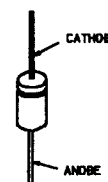
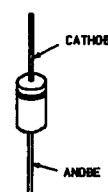
04SB60L-F



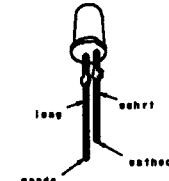
ER029-08J



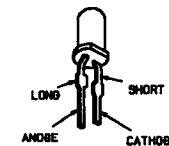
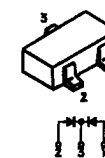
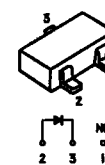
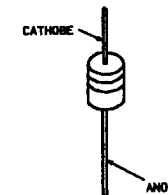
EGP20G

GP080  
RGP15J

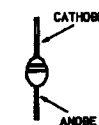
IR5BF-A



LB-201VR

MA152WK  
SVC203CP  
1S2837MA3036H  
MA3056M  
MA3068M  
R02.4M-B  
R03.6M-B2  
R05.6M-B2  
R06.2M-B2  
R06.8M-B2MTZJ-11C  
MTZJ-13B  
MTZJ-15A  
MTZJ-33A  
MTZJ-360  
MTZJ-3.9B  
MTZJ-4.7B  
MTZJ-5.6B  
MTZJ-5.6C  
MTZJ-6.2B  
MTZJ-6.8C  
MTZJ-7.5C  
MTZJ-9.1C  
MTZN-10C  
R011ESB3  
R05.6ESB2  
R06.2ESB2  
R06.8ESB2  
R07.5ESB2  
R09.1ESB3  
UZ-4.7BSC  
1S5119  
1S5133

U05G





SECTION 6  
EXPLODED VIEWS

## NOTE:

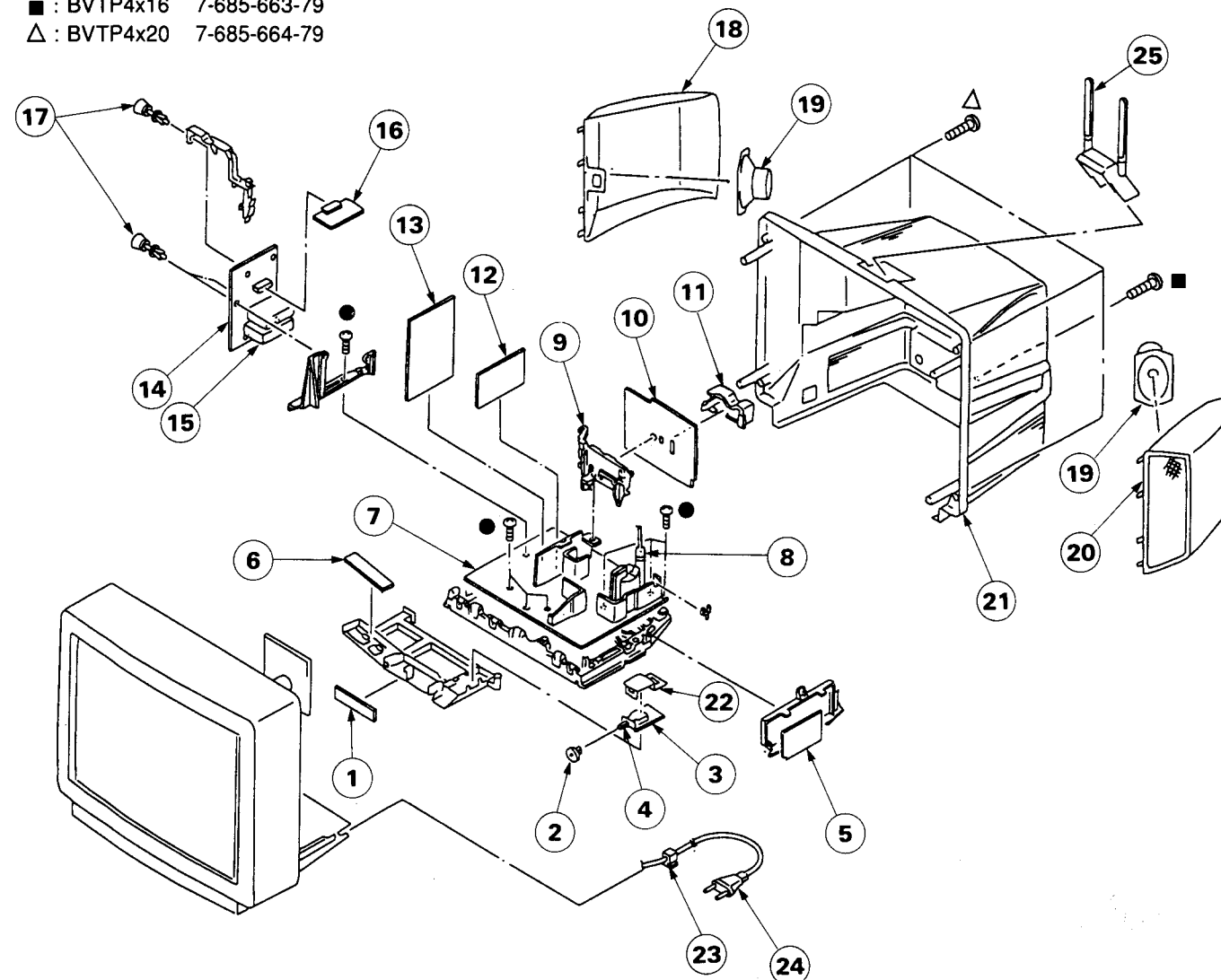
- Items with no part-number and no description are not stocked because they are seldom required for routine servicing.
- The sub-parts required to make a pre-assembled part are indicated by collation numbers in the remark column.

- Items marked "\*" are not stocked because they are seldom required for routine servicing. Some delay should be expected when ordering these items.

Components identified by shading and marked  $\Delta$  are critical for safety.  
Replace only with the part number specified.

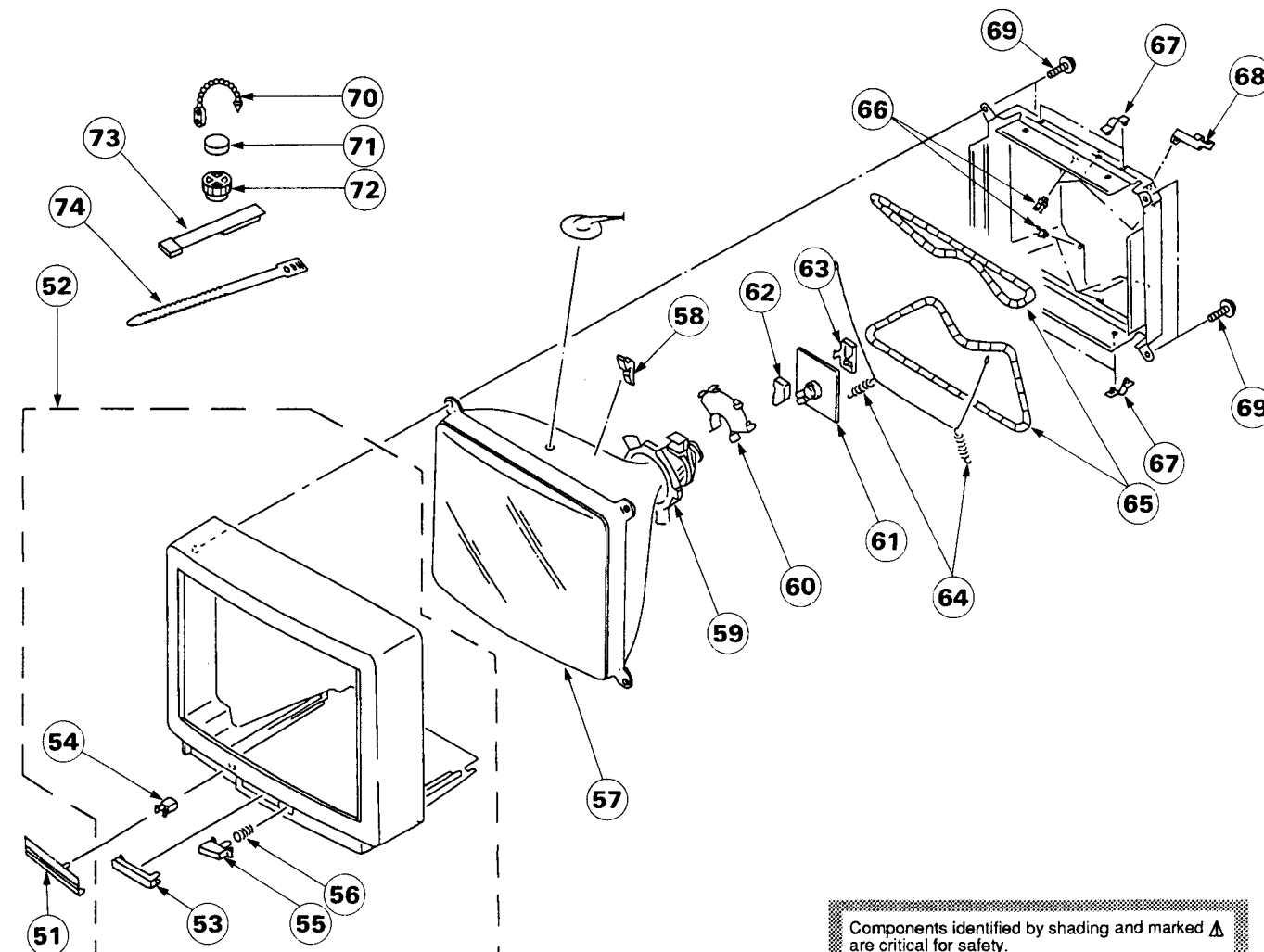
## 6-1. CHASSIS

- : BVTP3x12 7-685-648-79
- : BVTP4x16 7-685-663-79
- $\Delta$  : BVTP4x20 7-685-664-79



REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
1	*1-638-392-11	H2 BOARD		13	*A-1621-033-A	B BOARD, COMPLETE	
2	4-386-611-01	COVER, SWITCH		14	*A-1632-022-A	A BOARD, COMPLETE	
3	*1-638-390-11	F BOARD		15	$\Delta$ 1-465-301-11	TUNER, BT (UV-816(PLL))	
4	$\Delta$ 1-571-433-12	SWITCH, PUSH (AC POWER)		16	*A-1654-004-A	IFG BOARD, COMPLETE	
5	*1-643-334-11	G BOARD		17	4-386-618-01	RIVET, T TYPE	
6	*1-638-391-11	H1 BOARD		18	X-4200-088-3	BAFFLE (L) ASSY, BOARD	
7	*A-1642-072-A	D BOARD, COMPLETE		19	1-544-727-11	SPEAKER (7.5X13CM)	
8	$\Delta$ 1-439-416-51	TRANSFORMER ASSY, FLYBACK (UX-1650)		20	X-4200-087-3	BAFFLE (R) ASSY, BOARD	
9	*4-386-624-11	BRACKET, J		21	4-034-786-11	COVER, REAR	
10	*A-1651-031-A	J1 BOARD, COMPLETE		22	4-200-757-01	COVER, POWER SWITCH	
11	4-200-014-01	BRACKET, TERMINAL		23	$\Delta$ 4-389-201-03	HOLDER, AC CORD	
12	*A-1645-013-A	V BOARD, COMPLETE		24	$\Delta$ 1-590-501-11	CORD, POWER (WITH NOISE FILTER)	
				25	8-913-822-90	TRANSMITTER TMR-D1003 SET	

## 6-2. PICTURE TUBE

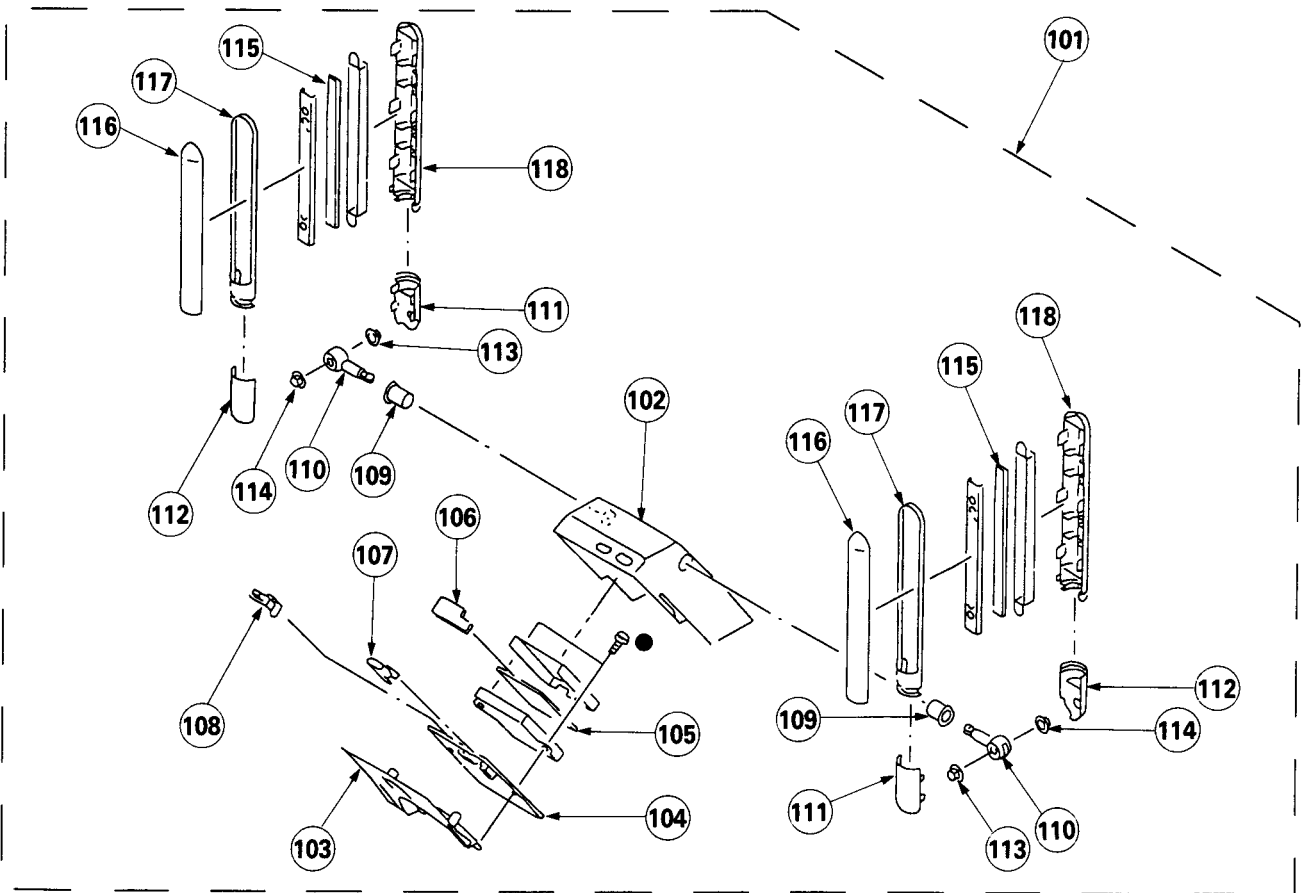


REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
51	4-200-889-31	DOOR		63	*4-379-160-01	COVER (REAR LID), CV	
52	X-4030-156-4	CABINET ASSY (WITH BEZEL ASSY)	53-56	64	4-303-774-99	SPRING	
53	4-200-148-01	WINDOW, ORNAMENTAL		65	$\Delta$ 1-460-091-11	COIL DEGAUSS	
54	4-392-036-01	CATCHER, PUSH		66	4-034-296-01	HOLDER, DGC	
55	4-200-886-01	BUTTON, POWER		67	*4-385-916-01	HOLDER (D)	
56	4-329-112-51	SPRING		68	*4-387-284-01	HOLDER, LEAD	
57	$\Delta$ 8-733-231-05	PICTURE TUBE (A59JWC61X)		69	4-036-188-01	SCREW (M), PT	
58	3-704-495-01	SPACER, DY		70	4-308-870-00	CLIP, LEAD WIRE	
59	$\Delta$ 1-451-311-21	DEFLECTION YOKE (Y25FXA)		71	1-452-032-00	MAGNET, DISK; 10MM $\phi$	
60	*4-385-422-01	HOLDER, LEAD		72	1-452-094-00	MAGNET, ROTATABLE DISK; 15MM $\phi$	
61	*A-1638-011-A	C BOARD, COMPLETE		73	X-4387-214-1	PERMALLOY ASSY, CORRECTION	
62	*4-379-167-01	COVER (MAIN), CV		74	3-701-007-00	BAND, BINDING	



### 6-3. TRANSMITTER

●: BVTP3x12 7-685-648-79



REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
101	A-4546-030-A	OVERALL ASSY	102~118	110	4-035-881-01	JOINT	
102	*4-035-887-01	COVER, MODULATOR		111	4-035-883-01	COVER (A), JOINT	
103	*4-035-888-01	BRACKET, MODULATOR		112	4-035-884-01	COVER (B), JOINT	
104	*1-643-141-11	SW BOARD		113	4-035-886-01	DISK (B)	
105	*A-4542-098-A	MAIN BOARD, COMPLETE		114	4-035-885-01	DISK (A)	
106	*1-643-965-11	CN BOARD		115	*1-643-140-11	LED BOARD	
107	4-035-878-01	BUTTON, PUSH		116	4-035-877-01	COVER, LED	
108	4-035-879-01	BUTTON, SLIDE		117	4-035-876-01	FRAME, EMITTER	
109	4-035-882-01	BEARING		118	4-035-875-01	HOLDER, EMITTER	







B

REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
D332	8-719-911-19	DIODE 1SS119		R314	1-216-182-00	METAL GLAZE 220 5%	1/8W
D333	8-719-911-19	DIODE 1SS119		R315	1-216-031-00	METAL GLAZE 180 5%	1/10W
D350	8-719-109-89	DIODE RD5.6ES-B2		R316	1-216-031-00	METAL GLAZE 180 5%	1/10W
<DELAY LINE>				R317	1-216-031-00	METAL GLAZE 180 5%	1/10W
DL332	1-236-062-11	MODULE, Y DELAY LINE		R318	1-249-429-11	CARBON 10K 5%	1/4W
DL401	1-415-613-11	DELAY LINE, Y		R319	1-249-409-11	CARBON 220 5%	1/4W
<IC>				R320	1-216-198-00	METAL GLAZE 1K 5%	1/8W
IC301	8-759-517-43	IC TDA4580-V7		R321	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
IC302	8-759-980-60	IC TDA8442N3		R322	1-216-049-00	METAL GLAZE 1K 5%	1/10W
IC303	8-759-140-53	IC UPD4053BC		R328	1-216-311-00	METAL GLAZE 6.8 5%	1/10W
IC331	8-759-521-22	IC TDA4650/V4		R329	1-216-311-00	METAL GLAZE 6.8 5%	1/10W
IC332	8-759-505-39	IC TDA4660V2		R330	1-216-311-00	METAL GLAZE 6.8 5%	1/10W
<COIL>				R331	1-216-001-00	METAL GLAZE 10 5%	1/10W
L301	1-410-868-11	INDUCTOR 4.7UH		R332	1-216-184-00	METAL GLAZE 270 5%	1/8W
L302	1-410-868-11	INDUCTOR 4.7UH		R333	1-216-121-00	METAL GLAZE 1M 5%	1/10W
L303	1-408-406-00	INDUCTOR 5.6UH		R334	1-216-073-00	METAL GLAZE 10K 5%	1/10W
L331	1-404-554-11	COIL		R335	1-247-852-11	CARBON 7.5K 5%	1/4W
L336	1-404-554-11	COIL		R336	1-216-061-00	METAL GLAZE 3.3K 5%	1/10W
L338	1-408-409-00	INDUCTOR 10UH		R337	1-216-184-00	METAL GLAZE 270 5%	1/8W
L1301	1-408-425-00	INDUCTOR 220UH		R338	1-216-001-00	METAL GLAZE 10 5%	1/10W
L1302	1-408-419-00	INDUCTOR 68UH		R339	1-216-033-00	METAL GLAZE 220 5%	1/10W
<TRANSISTOR>				R341	1-216-031-00	METAL GLAZE 180 5%	1/10W
Q301	8-729-120-28	TRANSISTOR 2SC1623-L5L6		R342	1-216-041-00	METAL GLAZE 470 5%	1/10W
Q303	8-729-120-28	TRANSISTOR 2SC1623-L5L6		R344	1-216-089-00	METAL GLAZE 47K 5%	1/10W
Q305	8-729-901-06	TRANSISTOR DTA144EK		R346	1-216-202-00	METAL GLAZE 1.5K 5%	1/8W
Q306	8-729-119-78	TRANSISTOR 2SC2785-HFE		R347	1-216-073-00	METAL GLAZE 10K 5%	1/10W
Q311	8-729-120-28	TRANSISTOR 2SC1623-L5L6		R348	1-216-089-00	METAL GLAZE 47K 5%	1/10W
Q312	8-729-120-28	TRANSISTOR 2SC1623-L5L6		R349	1-216-045-00	METAL GLAZE 680 5%	1/10W
Q313	8-729-120-28	TRANSISTOR 2SC1623-L5L6		R350	1-216-045-00	METAL GLAZE 680 5%	1/10W
Q316	8-729-120-28	TRANSISTOR 2SC1623-L5L6		R351	1-216-033-00	METAL GLAZE 220 5%	1/10W
Q330	8-729-216-22	TRANSISTOR 2SA1162-G		R354	1-216-033-00	METAL GLAZE 220 5%	1/10W
Q331	8-729-901-00	TRANSISTOR DTC124EK		R355	1-216-061-00	METAL GLAZE 3.3K 5%	1/10W
Q332	8-729-216-22	TRANSISTOR 2SA1162-G		R356	1-216-069-00	METAL GLAZE 6.8K 5%	1/10W
Q333	8-729-216-22	TRANSISTOR 2SA1162-G		R358	1-216-033-00	METAL GLAZE 220 5%	1/10W
Q334	8-729-120-28	TRANSISTOR 2SC1623-L5L6		R359	1-216-089-00	METAL GLAZE 47K 5%	1/10W
Q335	8-729-120-28	TRANSISTOR 2SC1623-L5L6		R360	1-216-089-00	METAL GLAZE 47K 5%	1/10W
Q381	8-729-901-00	TRANSISTOR DTC124EK		R361	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
Q382	8-729-120-28	TRANSISTOR 2SC1623-L5L6		R363	1-216-055-00	METAL GLAZE 1.8K 5%	1/10W
Q1301	8-729-901-00	TRANSISTOR DTC124EK		R364	1-216-059-00	METAL GLAZE 2.7K 5%	1/10W
Q1306	8-729-120-28	TRANSISTOR 2SC1623-L5L6		R365	1-216-047-00	METAL GLAZE 820 5%	1/10W
<RESISTOR>				R366	1-216-059-00	METAL GLAZE 2.7K 5%	1/10W
JR385	1-216-206-00	METAL GLAZE 2.2K 5%	1/8W	R367	1-216-033-00	METAL GLAZE 220 5%	1/10W
JR390	1-216-295-00	METAL GLAZE 0 5%	1/10W	R370	1-216-033-00	METAL GLAZE 220 5%	1/10W
R301	1-249-409-11	CARBON 220 5%	1/4W	R372	1-216-023-00	METAL GLAZE 82 5%	1/10W
R302	1-249-409-11	CARBON 220 5%	1/4W	R376	1-249-429-11	CARBON 10K 5%	1/4W
R303	1-249-409-11	CARBON 220 5%	1/4W	R377	1-216-037-00	METAL GLAZE 330 5%	1/10W
R304	1-249-409-11	CARBON 220 5%	1/4W	R378	1-216-097-00	METAL GLAZE 100K 5%	1/10W
R305	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W	R379	1-216-089-00	METAL GLAZE 47K 5%	1/10W
R307	1-216-097-00	METAL GLAZE 100K 5%	1/10W	R380	1-216-071-00	METAL GLAZE 8.2K 5%	1/10W
R308	1-216-296-00	METAL GLAZE 0 5%	1/8W	R381	1-216-093-00	METAL GLAZE 68K 5%	1/10W
R309	1-216-025-00	METAL GLAZE 100 5%	1/10W	R382	1-216-105-00	METAL GLAZE 220K 5%	1/10W
R310	1-216-025-00	METAL GLAZE 100 5%	1/10W	R383	1-216-115-00	METAL GLAZE 560K 5%	1/10W
R311	1-216-025-00	METAL GLAZE 100 5%	1/10W	R384	1-216-029-00	METAL GLAZE 150 5%	1/10W
R312	1-249-409-11	CARBON 220 5%	1/4W	R385	1-216-085-00	METAL GLAZE 33K 5%	1/10W
R313	1-216-081-00	METAL GLAZE 22K 5%	1/10W	R387	1-216-049-00	METAL GLAZE 1K 5%	1/10W
				R388	1-216-049-00	METAL GLAZE 1K 5%	1/10W
				R389	1-216-101-00	METAL GLAZE 150K 5%	1/10W
				R390	1-216-033-00	METAL GLAZE 220 5%	1/10W
				R392	1-216-021-00	METAL GLAZE 68 5%	1/10W
				R393	1-216-021-00	METAL GLAZE 68 5%	1/10W
				R394	1-216-021-00	METAL GLAZE 68 5%	1/10W
				R395	1-216-214-00	METAL GLAZE 4.7K 5%	1/8W
				R396	1-216-041-00	METAL GLAZE 470 5%	1/10W



<b>B</b>	<b>F</b>	<b>A</b>
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The components identified by shading and mark **Δ** are critical for safety.  
Replace only with part number specified.

KV-H2511D  
MDR-IF310/RM-816

**A G C**

REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
R168	1-216-089-00	METAL GLAZE 47K 5% 1/10W					
R169	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W					
R181	1-216-049-00	METAL GLAZE 1K 5% 1/10W					
R182	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W					
R193	1-216-073-00	METAL GLAZE 10K 5% 1/10W					
R194	1-216-017-00	METAL GLAZE 47 5% 1/10W					
R195	1-216-017-00	METAL GLAZE 47 5% 1/10W					
R196	1-216-113-00	METAL GLAZE 470K 5% 1/10W					
<TUNER>							
TU101	Δ 1-465-301-11	TUNER, ET (UV-816(PLL))					
<IF BLOCK>							
VIF101	1-466-154-11	IF BLOCK (IFG-389S)					
*****							
	*1-643-334-11	G BOARD					
		*****					
<CAPACITOR>							
C01	1-124-557-11	ELECT 1000MF 20% 25V					
C02	1-102-973-00	CERAMIC 100PF 5% 50V					
C03	1-124-360-00	ELECT 1000MF 20% 16V					
C04	1-102-973-00	CERAMIC 100PF 5% 50V					
C07	1-124-557-11	ELECT 1000MF 20% 25V					
<DIODE>							
D1	8-719-300-33	DIODE RU-3AM					
<CONNECTOR>							
G1	*1-568-878-51	PIN, CONNECTOR 3P					
G2	*1-568-878-51	PIN, CONNECTOR 3P					
<IC>							
IC01	8-759-037-26	IC TYA7812CT					
<IC LINK>							
PS1	Δ 1-532-637-91	LINK, IC 1A					
PS2	Δ 1-532-605-91	LINK, IC 0.4A					
<RESISTOR>							
R1	Δ 1-213-060-51	FUSIBLE 10 5% 1W F					
*****							
	*A-1638-011-A	C BOARD, COMPLETE					
		*****					
	*4-379-160-01	COVER (REAR LID), CV					
	*4-379-167-01	COVER (MAIN), CV					
<CONNECTOR>							
C71	*1-506-371-00	PIN, CONNECTOR 2P					
C72	*1-568-881-51	PIN, CONNECTOR 6P					
C81	*1-568-878-51	PIN, CONNECTOR 3P					
C82	*1-508-765-00	PIN, CONNECTOR (5MM PITCH) 3P					
<CAPACITOR>							
C703	1-102-980-00	CERAMIC 270PF 5% 50V					
C704	1-102-116-00	CERAMIC 680PF 10% 50V					
C705	1-102-978-00	CERAMIC 220PF 5% 50V					
C706	1-102-116-00	CERAMIC 680PF 10% 50V					
C707	1-162-116-00	CERAMIC 680PF 10% 2KV					
C708	1-162-114-00	CERAMIC 0.0047MF 2KV					
C709	1-162-116-00	CERAMIC 680PF 10% 50V					
C710	1-123-947-00	ELECT 10MF 20% 250V					
C711	1-101-880-00	CERAMIC 47PF 5% 50V					
C712	1-102-980-00	CERAMIC 270PF 5% 50V					
C714	1-124-360-00	ELECT 1000MF 20% 16V					
C716	1-162-622-11	CERAMIC 330PF 10% 400V					
C717	1-102-114-00	CERAMIC 470PF 10% 50V					
C718	1-102-114-00	CERAMIC 470PF 10% 50V					
C719	1-102-114-00	CERAMIC 470PF 10% 50V					
<DIODE>							
D701	8-719-110-14	DIODE RD9.1ES-B3					
D702	8-719-911-19	DIODE 1SS119					
D703	8-719-911-19	DIODE 1SS119					
D704	8-719-911-19	DIODE 1SS119					
D705	8-719-911-19	DIODE 1SS119					
D706	8-719-911-19	DIODE 1SS119					
D707	8-719-911-19	DIODE 1SS119					
D708	8-719-911-19	DIODE 1SS119					
D709	8-719-911-19	DIODE 1SS119					
D710	8-719-911-19	DIODE 1SS119					
D711	8-719-300-33	DIODE RU-3AM					
D713	8-719-911-19	DIODE 1SS119					
<JACK>							
J701	1-526-990-11	SOCKET, PICTURE TUBE					
<COIL>							
L704	1-408-415-00	INDUCTOR 33UH					
<TRANSISTOR>							
Q702	8-729-119-78	TRANSISTOR 2SC2785-HFE					
Q703	8-729-906-70	TRANSISTOR BF871					
Q704	8-729-200-17	TRANSISTOR 2SA1091-0					
Q705	8-729-119-78	TRANSISTOR 2SC2785-HFE					
Q706	8-729-906-70	TRANSISTOR BF871					
Q707	8-729-200-17	TRANSISTOR 2SA1091-0					
Q708	8-729-119-78	TRANSISTOR 2SC2785-HFE					
Q709	8-729-906-70	TRANSISTOR BF871					
Q710	8-729-200-17	TRANSISTOR 2SA1091-0					
<RESISTOR>							
R704	1-216-486-00	METAL OXIDE 8.2K 5% 3W F					
R705	1-202-824-00	SOLID 3.3K 10% 1/2W					
R706	1-249-409-11	CARBON 220 5% 1/4W					
R707	1-249-412-11	CARBON 390 5% 1/4W					
R708	1-249-401-11	CARBON 47 5% 1/4W					
R709	1-202-844-00	SOLID 330K 10% 1/2W					
R710	1-215-465-00	METAL 68K 1% 1/4W					
R711	1-249-426-11	CARBON 5.6K 5% 1/4W					



The components identified by shading and mark  $\Delta$  are critical for safety.  
Replace only with part number specified.

C

D

REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
R712	1-249-417-11	CARBON 1K 5% 1/4W		C027	1-124-910-11	ELECT 47MF 20% 50V	
R713	1-215-471-00	METAL 120K 1% 1/4W		C030	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
R714	1-216-486-00	METAL OXIDE 8.2K 5% 3W	F	C031	1-163-081-00	CERAMIC CHIP 0.22MF 25V	
R715	1-202-824-00	SOLID 3.3K 10% 1/2W		C032	1-163-081-00	CERAMIC CHIP 0.22MF 25V	
R716	1-249-409-11	CARBON 220 5% 1/4W		C033	1-163-181-00	CERAMIC CHIP 100PF 5% 50V	
R717	1-249-415-11	CARBON 680 5% 1/4W		C034	1-124-907-11	ELECT 10MF 20% 50V	
R718	1-202-814-11	SOLID 33K 10% 1/2W		C251	1-124-903-11	ELECT 1MF 20% 50V	
R719	1-249-401-11	CARBON 47 5% 1/4W		C252	1-126-233-11	ELECT 22MF 20% 50V	
R720	1-249-423-11	CARBON 3.3K 5% 1/4W		C253	1-163-009-11	CERAMIC CHIP 0.001MF 10% 50V	
R721	1-202-842-11	SOLID 220K 10% 1/2W		C254	1-137-098-11	FILM 0.1MF 10% 100V	
R722	1-202-848-00	SOLID 680K 10% 1/2W		C255	1-124-636-00	ELECT 3300MF 20% 25V	
R723	1-249-417-11	CARBON 1K 5% 1/4W		C261	1-124-903-11	ELECT 1MF 20% 50V	
R724	1-202-846-00	SOLID 470K 10% 1/2W		C262	1-126-233-11	ELECT 22MF 20% 50V	
R725	1-202-838-00	SOLID 100K 10% 1/2W		C263	1-163-009-11	CERAMIC CHIP 0.001MF 10% 50V	
R726	1-202-824-00	SOLID 3.3K 10% 1/2W		C264	1-137-098-11	FILM 0.1MF 10% 100V	
R727	1-249-409-11	CARBON 220 5% 1/4W		C265	1-124-564-11	ELECT 4700MF 20% 25V	
R728	1-216-347-11	METAL OXIDE 0.68 5% 1W	F	C270	1-137-035-11	FILM 0.47MF 10% 100V	
R729	1-249-416-11	CARBON 820 5% 1/4W		C274	1-137-035-11	FILM 0.47MF 10% 100V	
R730	1-249-401-11	CARBON 47 5% 1/4W		C501	1-124-927-11	ELECT 4.7MF 20% 50V	
R731	1-249-423-11	CARBON 3.3K 5% 1/4W		C502	1-124-927-11	ELECT 4.7MF 20% 50V	
R732	1-249-415-11	CARBON 680 5% 1/4W		C503	1-137-049-11	FILM 0.015MF 10% 400V	
R733	1-249-415-11	CARBON 680 5% 1/4W		C504	1-163-121-00	CERAMIC CHIP 150PF 5% 50V	
R734	1-249-405-11	CARBON 100 5% 1/4W		C505	1-108-794-11	MYLAR 0.0015MF 5% 50V	
R735	1-215-493-00	METAL 1M 1% 1/4W		C506	1-137-102-11	FILM 0.022MF 10% 250V	
R736	1-216-486-00	METAL OXIDE 8.2K 5% 3W	F	C507	1-137-033-11	FILM 0.33MF 10% 100V	
R737	1-215-491-00	METAL 820K 1% 1/4W		C508	1-137-102-11	FILM 0.022MF 10% 250V	
R739	1-249-417-11	CARBON 1K 5% 1/4W		C509	1-137-098-11	FILM 0.1MF 10% 100V	
<VARIABLE RESISTOR>				C510	1-161-959-00	CERAMIC 22PF 10% 500V	
RV701	1-230-641-11	RES, ADJ, METAL GLAZE 2.2M		C511	1-108-686-11	MYLAR 0.0033MF 10% 100V	
RV702	1-230-619-11	RES, ADJ, METAL GLAZE 110M		C512	1-137-098-11	FILM 0.1MF 10% 100V	
RV703	1-237-749-11	RES, ADJ, CARBON 2200		C513	1-163-125-00	CERAMIC CHIP 220PF 5% 50V	
RV704	1-237-749-11	RES, ADJ, CARBON 2200		C514	1-137-031-11	FILM 0.22MF 10% 100V	
*****				C515	1-124-903-11	ELECT 1MF 20% 50V	
*A-1642-072-A	D BOARD, COMPLETE	*****		C516	1-108-680-11	MYLAR 0.001MF 10% 100V	
4-200-001-01	HOLDER, IC			C517	1-124-252-00	ELECT 0.33MF 20% 50V	
4-201-023-01	SPACER, INSULATING			C518	1-124-902-00	ELECT 0.47MF 20% 50V	
*4-341-751-01	BYELET			C519	1-136-173-00	FILM 0.47MF 5% 50V	
*4-341-752-01	BYELET			C520	1-164-161-11	CERAMIC CHIP 0.0022MF 10% 50V	
*4-368-683-01	SPRING			C521	1-137-098-11	FILM 0.1MF 10% 100V	
<CAPACITOR>				C522	1-124-122-11	ELECT 100MF 20% 50V	
C002	1-163-205-00	CERAMIC CHIP 0.001MF 5% 50V		C523	1-108-680-11	MYLAR 0.001MF 10% 100V	
C003	1-124-925-11	ELECT 2.2MF 20% 50V		C524	1-108-798-11	MYLAR 0.0033MF 5% 50V	
C004	1-124-120-11	ELECT 220MF 20% 16V		C525	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C005	1-124-903-11	ELECT 1MF 20% 50V		C526	1-163-103-00	CERAMIC CHIP 27PF 5% 50V	
C008	1-163-117-00	CERAMIC CHIP 100PF 5% 50V		C527	1-137-098-11	FILM 0.1MF 10% 100V	
C009	1-163-117-00	CERAMIC CHIP 100PF 5% 50V		C531	1-124-190-00	ELECT 680MF 10% 25V	
C010	1-124-120-11	ELECT 220MF 20% 16V		C532	1-124-122-11	ELECT 100MF 20% 50V	
C011	1-163-031-11	CERAMIC CHIP 0.01MF 50V		C533	1-137-096-11	FILM 0.068MF 10% 100V	
C013	1-137-098-11	FILM 0.1MF 10% 100V		C534	1-124-120-11	ELECT 220MF 20% 16V	
C014	1-137-098-11	FILM 0.1MF 10% 100V		C536	1-131-365-00	TANTALUM 10MF 10% 16V	
C015	1-124-902-00	ELECT 0.47MF 20% 50V		C537	1-124-903-11	ELECT 1MF 20% 50V	
C016	1-163-141-00	CERAMIC CHIP 0.001MF 5% 50V		C538	1-108-680-11	MYLAR 0.001MF 10% 100V	
C017	1-137-098-11	FILM 0.1MF 10% 100V		C539	1-163-129-00	CERAMIC CHIP 330PF 5% 50V	
C018	1-163-127-00	CERAMIC CHIP 270PF 5% 50V		C540	1-163-009-11	CERAMIC CHIP 0.001MF 10% 50V	
C019	1-137-094-11	FILM 0.047MF 10% 100V		C592	1-124-122-11	ELECT 100MF 20% 50V	
C021	1-163-117-00	CERAMIC CHIP 100PF 5% 50V		C593	1-163-129-00	CERAMIC CHIP 330PF 5% 50V	
C023	1-163-117-00	CERAMIC CHIP 100PF 5% 50V		C601	1-161-964-61	CERAMIC 0.0047MF 250V	
C024	1-163-117-00	CERAMIC CHIP 100PF 5% 50V		C602	1-161-964-61	CERAMIC 0.0047MF 250V	
				C603	1-161-964-61	CERAMIC 0.0047MF 250V	
				C604	1-125-318-11	ELECT (BLOCK) 220MF 20% 400V	
				C605	1-124-484-11	ELECT 220MF 20% 35V	
				C606	1-163-137-00	CERAMIC CHIP 680PF 5% 50V	
				C607	1-137-028-11	FILM 1MF 10% 63V	



REF. NO.	PART NO.	DESCRIPTION	REMARKS
C608	1-124-927-11	ELECT	4.7MF 20% 50V
C611	1-124-910-11	ELECT	47MF 20% 50V
C612	1-108-680-11	MYLAR	0.001MF 10% 100V
C613	1-136-539-11	FILM	0.0022MF 3% 2KV
C614	1-102-030-00	CERAMIC	330PF 10% 500V
C615	1-128-142-11	ELECT	1500MF 20% 25V
C616	1-102-030-00	CERAMIC	330PF 10% 500V
C617	1-124-122-11	ELECT	100MF 20% 50V
C618	1-162-115-00	CERAMIC	330PF 10% 2KV
C619	1-128-320-11	ELECT	2200MF 20% 16V
C620	1-136-173-00	FILM	0.47MF 5% 50V
C621	1-124-347-00	ELECT	100MF 20% 160V
C622	1-128-320-11	ELECT	2200MF 20% 16V
C623	1-124-910-11	ELECT	47MF 20% 50V
C624	1-124-122-11	ELECT	100MF 20% 50V
C625	1-124-360-00	ELECT	1000MF 20% 16V
C626	1-124-907-11	ELECT	10MF 20% 50V
C627	1-163-009-11	CERAMIC CHIP	0.001MF 10% 50V
C631	1-124-927-11	ELECT	4.7MF 20% 50V
C632	1-163-009-11	CERAMIC CHIP	0.001MF 10% 50V
C633	1-163-117-00	CERAMIC CHIP	100PF 5% 50V
C801	1-126-105-11	ELECT	1000MF 20% 35V
C802	1-102-030-00	CERAMIC	330PF 10% 500V
C804	1-123-948-00	ELECT	22MF 20% 250V
C805	1-162-114-00	CERAMIC	0.0047MF 2KV
C806	1-137-098-11	FILM	0.1MF 10% 100V
C807	1-106-395-00	MYLAR	0.15MF 10% 200V
C810	1-123-024-21	ELECT	33MF 10% 160V
C811	1-136-113-00	FILM	2MF 5% 200V
C812	1-124-634-11	ELECT	1MF 20% 250V
C813	1-102-212-00	CERAMIC	820PF 10% 500V
C814	△ 1-161-731-51	CERAMIC	0.001MF 10% 2KV
C815	1-136-111-00	FILM	1MF 5% 200V
C817	△ 1-136-565-11	FILM	0.015MF 3% 1.4KV
C818	△ 1-129-721-51	FILM	0.039MF 10% 630V
C819	△ 1-161-731-51	CERAMIC	0.001MF 10% 2KV
C820	1-137-046-11	FILM	0.0082MF 10% 400V
C821	△ 1-162-116-51	CERAMIC	680PF 10% 2KV
C822	1-163-005-11	CERAMIC CHIP	470PF 10% 50V
C823	1-137-043-11	FILM	0.0047MF 10% 400V
C824	1-102-212-00	CERAMIC	820PF 10% 500V
C825	1-137-102-11	FILM	0.022MF 10% 250V
C1601	△ 1-136-518-11	FILM	0.33MF 20% 300V
C1602	△ 1-136-519-11	FILM	0.47MF 20% 300V
C1603	△ 1-164-246-61	CERAMIC	0.0022MF 20% 400V
C1605	△ 1-164-246-61	CERAMIC	0.0022MF 20% 400V
C1607	△ 1-161-964-61	CERAMIC	0.0047MF 250V
<FILTER>			
CF001	1-577-364-11	VIBRATOR, CERAMIC	
CF501	1-567-888-11	OSCILLATOR, CERAMIC	
<CONNECTOR>			
D1	*1-568-881-51	PIN, CONNECTOR 6P	
D2	*1-568-882-51	PIN, CONNECTOR 7P	
D11	*1-565-394-11	PIN, BOARD TO BOARD CONNECTOR	
D12	*1-565-394-11	PIN, BOARD TO BOARD CONNECTOR	
D18	*1-560-290-00	PLUG, CONNECTOR (2.5MM PITCH)	
D21	*1-565-394-11	PIN, BOARD TO BOARD CONNECTOR	
D22	*1-565-394-11	PIN, BOARD TO BOARD CONNECTOR	
D31	*1-565-394-11	PIN, BOARD TO BOARD CONNECTOR	
D32	*1-565-394-11	PIN, BOARD TO BOARD CONNECTOR	

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The components identified by shading and mark  $\Delta$  are critical for safety.  
Replace only with part number specified.

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REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
D804	8-719-911-55	DIODE U05G		Q008	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
D805	8-719-911-55	DIODE U05G		Q009	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
D806	8-719-945-80	DIODE ERC06-15S		Q010	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
D807	8-719-945-80	DIODE ERC06-15S		Q251	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
D808	8-719-900-26	DIODE ERD29-08J		Q261	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
<IC>				Q271	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
IC001	8-759-047-60	IC SDA20560-A012		Q502	8-729-216-22	TRANSISTOR 2SA1162-G	
IC002	8-759-000-47	IC MC14051BCP		Q505	8-729-140-96	TRANSISTOR 2SD774-34	
IC003	8-759-945-58	IC RC4558P		Q506	8-729-140-97	TRANSISTOR 2SB734-34	
IC005	8-759-748-56	IC SDA2546		Q507	8-729-216-22	TRANSISTOR 2SA1162-G	
IC251	8-759-988-94	IC TDA2050		Q598	8-729-216-22	TRANSISTOR 2SA1162-G	
	4-812-134-00	RIVET NYLON, 3.5; IC251		Q601	8-729-122-03	TRANSISTOR 2SA1220A-P	
IC261	8-759-988-94	IC TDA2050		Q602	8-729-209-02	TRANSISTOR 2SD1548-LB	
	4-812-134-00	RIVET NYLON, 3.5; IC261		Q603	8-729-122-03	TRANSISTOR 2SA1220A-P	
IC501	8-759-970-73	IC TEA2028B		Q604	8-729-216-22	TRANSISTOR 2SA1162-G	
IC502	8-759-944-57	IC TDA8170		Q605	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
IC601	8-759-988-95	IC TEA2260		Q606	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
IC604	8-759-510-52	IC TEA7605		Q607	8-729-920-92	TRANSISTOR 2SD2096-BF	
IC608	8-759-929-62	IC LM7812CT		Q608	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
<COIL>				Q609	8-729-320-62	TRANSISTOR 2SD789-34	
L501	1-408-225-00	INDUCTOR 3.3UH		Q801	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
L601	1-420-872-00	COIL, AIR CORE		Q804	8-729-304-50	TRANSISTOR 2SD1941-06	
L602	1-410-396-41	FERRITE BEAD INDUCTOR		Q805	8-729-119-80	TRANSISTOR 2SC2688-LK	
L603	1-410-396-41	FERRITE BEAD INDUCTOR		<RESISTOR>			
L604	1-410-671-31	INDUCTOR 47UH		JR1	1-216-296-00	METAL GLAZE 0 5% 1/8W	
L605	1-459-585-11	COIL (WITH CORE) (DRUM TYPE)		JR3	1-216-296-00	METAL GLAZE 0 5% 1/8W	
L606	1-412-529-11	INDUCTOR 22UH		JR4	1-216-295-00	METAL GLAZE 0 5% 1/10W	
L607	1-410-671-31	INDUCTOR 47UH		JR7	1-216-296-00	METAL GLAZE 0 5% 1/8W	
L803	1-459-104-00	COIL, WITH CORE		R001	1-216-041-00	METAL GLAZE 470 5% 1/10W	
L804	1-408-239-00	INDUCTOR 4.7MMH		R002	1-216-041-00	METAL GLAZE 470 5% 1/10W	
L805 $\Delta$	1-459-755-12	COIL, HORIZONTAL LINEARITY		R003	1-216-198-00	METAL GLAZE 1K 5% 1/8W	
L806	1-459-111-00	COIL, DRAM CORE (CDI)		R004	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
L809	1-420-872-00	COIL, AIR CORE		R005	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
L810 $\Delta$	1-421-982-12	PMC		R006	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
<TRANSFORMER>				R007	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
LF1601 $\Delta$	1-421-866-12	LFT		R008	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
LF1602 $\Delta$	1-421-776-21	LFT		R009	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
LF1603 $\Delta$	1-421-862-11	LFT		R010	1-216-041-00	METAL GLAZE 470 5% 1/10W	
T601 $\Delta$	1-450-038-11	S.R.T		R012	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
T602 $\Delta$	1-424-277-11	TRANSFORMER, TRIGGER PULSE		R013	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
T801 $\Delta$	1-437-090-21	HDT		R014	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
T802 $\Delta$	1-439-416-51	TRANSFORMER ASSY, FLYBACK (UX-1650)		R015	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
<IC LINK>				R016	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
PS601 $\Delta$	1-532-984-91	LINK, IC 2A		R017	1-216-689-11	METAL GLAZE 39K 5% 1/10W	
PS602 $\Delta$	1-532-984-91	LINK, IC 2A		R018	1-216-095-00	METAL GLAZE 82K 5% 1/10W	
PS603 $\Delta$	1-532-679-91	LINK, IC 0.6A		R019	1-216-025-00	METAL GLAZE 100 5% 1/10W	
PS604 $\Delta$	1-532-984-91	LINK, IC 2A		R020	1-216-025-00	METAL GLAZE 100 5% 1/10W	
<TRANSISTOR>				R021	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
Q001	8-729-901-01	TRANSISTOR DTC144EK		R022	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
Q002	8-729-901-01	TRANSISTOR DTC144EK		R024	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
Q003	8-729-216-22	TRANSISTOR 2SA1162-G		R025	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
Q004	8-729-216-22	TRANSISTOR 2SA1162-G		R026	1-216-182-00	METAL GLAZE 220 5% 1/8W	
Q005	8-729-901-01	TRANSISTOR DTC144EK		R027	1-216-025-00	METAL GLAZE 100 5% 1/10W	
Q006	8-729-901-01	TRANSISTOR DTC144EK		R028	1-216-025-00	METAL GLAZE 100 5% 1/10W	
Q007	8-729-120-28	TRANSISTOR 2SC1623-L5L6		R029	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
				R030	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
				R031	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
				R032	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
				R033	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
				R034	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
				R035	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
				R036	1-216-083-00	METAL GLAZE 27K 5% 1/10W	



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REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
R037	1-216-069-00	METAL GLAZE	6.8K 5% 1/10W	R261	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R038	1-216-069-00	METAL GLAZE	6.8K 5% 1/10W	R262	1-216-039-00	METAL GLAZE	390 5% 1/10W
R039	1-216-081-00	METAL GLAZE	22K 5% 1/10W	R263	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R040	1-216-077-00	METAL GLAZE	15K 5% 1/10W	R264	1-216-357-00	METAL OXIDE	4.7 5% 1W F
R041	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R265	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R042	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R266	1-216-115-00	METAL GLAZE	560K 5% 1/10W
R043	1-216-041-00	METAL GLAZE	470 5% 1/10W	R267	1-216-077-00	METAL GLAZE	15K 5% 1/10W
R044	1-216-097-00	METAL GLAZE	100K 5% 1/10W	R268	1-215-869-11	METAL OXIDE	1K 5% 1W F
R045	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W	R269	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R046	1-216-095-00	METAL GLAZE	82K 5% 1/10W	R270	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R047	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R271	1-216-045-00	METAL GLAZE	680 5% 1/10W
R048	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R272	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R049	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R273	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R050	1-216-067-00	METAL GLAZE	5.6K 5% 1/10W	R274	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R051	1-216-041-00	METAL GLAZE	470 5% 1/10W	R500	1-216-115-00	METAL GLAZE	560K 5% 1/10W
R052	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R501	1-216-041-00	METAL GLAZE	470 5% 1/10W
R053	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R502	1-216-033-00	METAL GLAZE	220 5% 1/10W
R054	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R503	1-216-035-00	METAL GLAZE	270 5% 1/10W
R055	1-216-037-00	METAL GLAZE	330 5% 1/10W	R504	1-249-420-11	CARBON	1.8K 5% 1/4W
R056	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R505	1-216-077-00	METAL GLAZE	15K 5% 1/10W
R057	1-216-025-00	METAL GLAZE	100 5% 1/10W	R506	1-216-071-00	METAL GLAZE	8.2K 5% 1/10W
R058	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R509	1-216-063-00	METAL GLAZE	3.9K 5% 1/10W
R059	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R510	1-216-067-00	METAL GLAZE	5.6K 5% 1/10W
R060	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R514	1-216-033-00	METAL GLAZE	220 5% 1/10W
R061	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W	R515	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W
R062	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R517	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R063	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R518	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R064	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R519	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R065	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R520	1-216-037-00	METAL GLAZE	330 5% 1/10W
R066	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R521	1-216-025-00	METAL GLAZE	100 5% 1/10W
R067	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R522	1-215-469-00	METAL	100K 1% 1/4W
R068	1-216-174-00	METAL GLAZE	100 5% 1/8W	R523	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R069	1-216-174-00	METAL GLAZE	100 5% 1/8W	R524	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R070	1-216-198-00	METAL GLAZE	1K 5% 1/8W	R525	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R071	1-216-198-00	METAL GLAZE	1K 5% 1/8W	R526	1-249-409-11	CARBON	220 5% 1/4W F
R072	1-216-222-00	METAL GLAZE	10K 5% 1/8W	R527	1-216-077-00	METAL GLAZE	15K 5% 1/10W
R073	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R528	1-216-031-00	METAL GLAZE	180 5% 1/10W
R075	1-216-041-00	METAL GLAZE	470 5% 1/10W	R529	1-216-069-00	METAL GLAZE	6.8K 5% 1/10W
R076	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R530	1-249-448-11	CARBON	1.2 5% 1/4W F
R077	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R531	1-216-099-00	METAL GLAZE	120K 5% 1/10W
R078	1-216-198-00	METAL GLAZE	1K 5% 1/8W	R532	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R079	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R533	1-216-295-00	METAL GLAZE	0 5% 1/10W
R080	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R534	1-216-119-00	METAL GLAZE	820K 5% 1/10W
R081	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R535	1-249-749-00	CARBON	2.2M 5% 1/4W
R083	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R536	1-216-129-00	METAL GLAZE	2.2M 5% 1/10W
R084	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R537	1-216-083-00	METAL GLAZE	27K 5% 1/10W
R085	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R538	1-216-101-00	METAL GLAZE	150K 5% 1/10W
R086	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R539	1-216-101-00	METAL GLAZE	150K 5% 1/10W
R087	1-216-035-00	METAL GLAZE	270 5% 1/10W	R540	1-216-013-00	METAL GLAZE	33 5% 1/10W
R088	1-216-059-00	METAL GLAZE	2.7K 5% 1/10W	R541	1-216-091-00	METAL GLAZE	56K 5% 1/10W
R093	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R542	1-216-308-00	METAL GLAZE	4.7 5% 1/10W
R094	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R543	1-249-451-11	CARBON	2.2 5% 1/4W
R095	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R544	1-247-745-11	CARBON	330 5% 1/2W
R096	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R545	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R098	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R546	1-216-083-00	METAL GLAZE	27K 5% 1/10W
R251	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W	R547	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W
R252	1-216-039-00	METAL GLAZE	390 5% 1/10W	R548	1-216-349-00	METAL OXIDE	1 5% 1W F
R253	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R549	1-216-454-11	METAL OXIDE	390 5% 2W F
R254	1-216-357-00	METAL OXIDE	4.7 5% 1W F	R550	1-216-095-00	METAL GLAZE	82K 5% 1/10W
R255	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R551	1-216-129-00	METAL GLAZE	2.2M 5% 1/10W
R256	1-216-115-00	METAL GLAZE	560K 5% 1/10W	R553	1-215-869-11	METAL OXIDE	1K 5% 1W
R257	1-216-077-00	METAL GLAZE	15K 5% 1/10W	R554	1-216-037-00	METAL GLAZE	330 5% 1/10W
R258	1-215-869-11	METAL OXIDE	1K 5% 1W F	R555	1-216-129-00	METAL GLAZE	2.2M 5% 1/10W
R259	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W				



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REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
R556	1-216-025-00	METAL GLAZE	100 5% 1/10W	R829	1-216-051-00	METAL GLAZE	1.2K 5% 1/10W
R557	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W	R831	1-249-451-11	CARBON	2.2 5% 1/4W
R558	1-216-113-00	METAL GLAZE	470K 5% 1/10W	R1601	$\Delta$ 1-246-513-75	CARBON	47K 5% 1/4W
R559	1-216-069-00	METAL GLAZE	6.8K 5% 1/10W	R1602	$\Delta$ 1-244-945-91	CARBON	1M 5% 1/2W
R560	1-216-037-00	METAL GLAZE	330 5% 1/10W	R1603	$\Delta$ 1-217-328-11	WIREWOUND	2.7 10% 7W F
R591	1-216-047-00	METAL GLAZE	820 5% 1/10W	R1604	$\Delta$ 1-246-513-75	CARBON	47K 5% 1/4W
R592	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R1605	$\Delta$ 1-218-265-91	METAL GLAZE	8.2M 5% 1W
R593	1-216-053-00	METAL GLAZE	1.5K 5% 1/10W	R5501	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R594	1-216-071-00	METAL GLAZE	8.2K 5% 1/10W	R5503	1-216-308-00	METAL GLAZE	4.7 5% 1/10W
R597	1-216-041-00	METAL GLAZE	470 5% 1/10W	R5504	1-216-121-00	METAL GLAZE	1M 5% 1/10W
R598	1-215-900-11	METAL OXIDE	22K 5% 2W F	R5505	1-216-001-00	METAL GLAZE	10 5% 1/10W
R600	1-249-381-11	CARBON	1 5% 1/4W	<VARIABLE RESISTOR>			
R601	1-216-353-00	METAL OXIDE	2.2 5% 1W F	RV501	1-238-013-11	RES, ADJ, CARBON	2.2K
R603	1-216-469-11	METAL OXIDE	12 5% 3W F	RV502	1-238-016-11	RES, ADJ, CARBON	10K
R604	1-216-025-00	METAL GLAZE	100 5% 1/10W	RV601	1-238-011-11	RES, ADJ, CARBON	470
R605	1-216-081-00	METAL GLAZE	22K 5% 1/10W	<SPARK GAP>			
R606	1-216-051-00	METAL GLAZE	1.2K 5% 1/10W	SG801	1-519-422-11	GAP, SPARK	
R607	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W	<THERMISTOR>			
R608	1-216-488-11	METAL OXIDE	18K 5% 3W F	THP601	$\Delta$ 1-808-059-32	THERMISTOR, POSITIVE	
R609	1-216-007-00	METAL GLAZE	18 5% 1/10W	*****			
R610	1-244-941-00	CARBON	680K 5% 1/2W	*A-1645-013-A V BOARD, COMPLETE			
R611	1-216-015-00	METAL GLAZE	39 5% 1/10W	*****			
R612	1-216-049-00	METAL GLAZE	1K 5% 1/10W	<CAPACITOR>			
R613	1-216-097-00	METAL GLAZE	100K 5% 1/10W	C1	1-126-101-11	ELECT	100MF 20% 16V
R614	1-205-758-11	WIREWOUND	100 10% 10W F	C2	1-163-038-00	CERAMIC CHIP	0.1MF 25V
R616	1-216-099-00	METAL GLAZE	120K 5% 1/10W	C3	1-124-120-11	ELECT	220MF 20% 16V
R617	1-216-037-00	METAL GLAZE	330 5% 1/10W	C4	1-163-077-00	CERAMIC CHIP	0.1MF 50V
R618	1-216-431-11	METAL OXIDE	560 5% 1W F	C5	1-124-120-11	ELECT	220MF 20% 16V
R619	1-216-073-00	METAL GLAZE	10K 5% 1/10W	C6	1-163-038-00	CERAMIC CHIP	0.1MF 25V
R620	1-216-081-00	METAL GLAZE	22K 5% 1/10W	C10	1-163-038-00	CERAMIC CHIP	0.1MF 25V
R621	1-216-077-00	METAL GLAZE	15K 5% 1/10W	C11	1-163-038-00	CERAMIC CHIP	0.1MF 25V
R622	1-216-073-00	METAL GLAZE	10K 5% 1/10W	C12	1-163-038-00	CERAMIC CHIP	0.1MF 25V
R623	1-216-081-00	METAL GLAZE	22K 5% 1/10W	C13	1-163-038-00	CERAMIC CHIP	0.1MF 25V
R624	1-216-067-00	METAL GLAZE	5.6K 5% 1/10W	C14	1-124-927-11	ELECT	4.7MF 20% 50V
R625	1-215-865-11	METAL OXIDE	220 5% 1W F	C15	1-124-927-11	ELECT	4.7MF 20% 50V
R626	1-216-037-00	METAL GLAZE	330 5% 1/10W	C16	1-163-141-00	CERAMIC CHIP	0.001MF 5% 50V
R628	1-216-001-00	METAL GLAZE	10 5% 1/10W	C17	1-163-141-00	CERAMIC CHIP	0.001MF 5% 50V
R629	1-216-037-00	METAL GLAZE	330 5% 1/10W	C18	1-163-141-00	CERAMIC CHIP	0.001MF 5% 50V
R631	1-216-465-11	METAL OXIDE	27K 5% 2W	C26	1-163-038-00	CERAMIC CHIP	0.1MF 25V
R633	1-216-049-00	METAL GLAZE	1K 5% 1/10W	C27	1-163-117-00	CERAMIC CHIP	100PF 5% 50V
R634	1-216-430-11	METAL OXIDE	390 5% 1W F	C28	1-163-117-00	CERAMIC CHIP	100PF 5% 50V
R635	1-216-073-00	METAL GLAZE	10K 5% 1/10W	C29	1-163-117-00	CERAMIC CHIP	100PF 5% 50V
R636	1-216-073-00	METAL GLAZE	10K 5% 1/10W	C32	1-163-038-00	CERAMIC CHIP	0.1MF 25V
R643	1-217-189-21	WIREWOUND	0.12 5% 2W F	C33	1-163-038-00	CERAMIC CHIP	0.1MF 25V
R651	1-216-025-00	METAL GLAZE	100 5% 1/10W	<CONNECTOR>			
R653	1-205-758-11	WIREWOUND	100 10% 10W F	CNV1	*1-565-393-11	CONNECTOR, BOARD TO BOARD	
R802	1-249-443-11	CARBON	0.47 5% 1/4W F	CNV2	*1-565-393-11	CONNECTOR, BOARD TO BOARD	
R805	1-249-448-11	CARBON	1.2 5% 1/4W F	<DIODE>			
R806	1-216-093-00	METAL GLAZE	68K 5% 1/10W	D1	8-719-105-91	DIODE RD5.6M-B2	
R807	1-217-778-11	FUSIBLE	1K 5% 1W F	D3	8-719-914-44	DIODE DAP202K	
R809	1-202-821-11	SOLID	1.8K 10% 1/2W				
R810	1-202-818-00	SOLID	1K 10% 1/2W				
R811	1-215-882-00	METAL OXIDE	22 5% 2W F				
R812	1-249-494-11	CARBON	68K 5% 1/2W				
R815	1-215-884-11	METAL OXIDE	47 5% 2W F				
R816	1-215-868-00	METAL OXIDE	680 5% 1W F				
R817	1-216-049-00	METAL GLAZE	1K 5% 1/10W				
R820	1-249-403-11	CARBON	68 5% 1/4W				
R821	1-247-725-11	CARBON	10K 5% 1/4W F				
R822	$\Delta$ 1-217-778-61	FUSIBLE	1K 5% 1W F				
R825	1-216-345-11	METAL OXIDE	0.47 5% 1W F				
R826	1-216-097-00	METAL GLAZE	100K 5% 1/10W				
R827	1-216-073-00	METAL GLAZE	10K 5% 1/10W				
R828	1-216-059-00	METAL GLAZE	2.7K 5% 1/10W				



The components identified by shading and mark  $\Delta$  are critical for safety.  
Replace only with part number specified.

V H1

REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
D4	8-719-400-18	DIODE MA152WK		R6	1-216-001-00	METAL GLAZE 10 5% 1/10W	
D5	8-719-914-44	DIODE DAP202K		R7	1-216-083-00	METAL GLAZE 27K 5% 1/10W	
D6	8-719-400-18	DIODE MA152WK		R8	1-216-071-00	METAL GLAZE 8.2K 5% 1/10W	
D7	8-719-105-52	DIODE RD3.6M-B2		R9	1-216-308-00	METAL GLAZE 4.7 5% 1/10W	
D9	8-719-106-17	DIODE RD6.8M-B2		R02	1-216-214-00	METAL GLAZE 4.7K 5% 1/8W	
				R10	1-218-325-11	METAL GLAZE 120 5% 1/4W	
<IC>				R11	1-218-325-11	METAL GLAZE 120 5% 1/4W	
IC1	8-759-039-18	IC SDA20162-B002		R12	1-218-325-11	METAL GLAZE 120 5% 1/4W	
IC2	8-759-045-54	IC SAA5246P/E/M4A		R13	1-216-025-00	METAL GLAZE 100 5% 1/10W	
IC3	8-759-510-49	IC FCB61C65L-70P		R14	1-216-001-00	METAL GLAZE 10 5% 1/10W	
				R15	1-216-013-00	METAL GLAZE 33 5% 1/10W	
<COIL>				R16	1-216-013-00	METAL GLAZE 33 5% 1/10W	
L1	1-408-403-00	INDUCTOR 3.3UH		R17	1-216-013-00	METAL GLAZE 33 5% 1/10W	
L2	1-408-407-00	INDUCTOR 6.8UH		R18	1-216-025-00	METAL GLAZE 100 5% 1/10W	
L3	1-408-407-00	INDUCTOR 6.8UH		R19	1-216-025-00	METAL GLAZE 100 5% 1/10W	
L4	1-408-407-00	INDUCTOR 6.8UH		R20	1-216-041-00	METAL GLAZE 470 5% 1/10W	
<IC LINK>				R21	1-216-041-00	METAL GLAZE 470 5% 1/10W	
PS1	$\Delta$ 1-532-679-91	LINK, IC 0.6A		R22	1-216-168-00	METAL GLAZE 56 5% 1/8W	
<TRANSISTOR>				R23	1-216-214-00	METAL GLAZE 4.7K 5% 1/8W	
Q1	8-729-900-53	TRANSISTOR DTC114EK		R24	1-216-055-00	METAL GLAZE 1.8K 5% 1/10W	
Q2	8-729-920-92	TRANSISTOR 2SD2096-EF		R25	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
Q3	8-729-120-28	TRANSISTOR 2SC1623-L5L6		R26	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
Q4	8-729-120-28	TRANSISTOR 2SC1623-L5L6		R27	1-216-214-00	METAL GLAZE 4.7K 5% 1/8W	
Q5	8-729-807-87	TRANSISTOR 2SB1295-UL6		R28	1-216-067-00	METAL GLAZE 5.6K 5% 1/10W	
Q6	8-729-807-87	TRANSISTOR 2SB1295-UL6		R34	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
Q7	8-729-807-87	TRANSISTOR 2SB1295-UL6		R35	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
Q8	8-729-120-28	TRANSISTOR 2SC1623-L5L6		R40	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
<RESISTOR>				R41	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
JR01	1-216-295-00	METAL GLAZE 0 5% 1/10W		R42	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
JR02	1-216-295-00	METAL GLAZE 0 5% 1/10W		R44	1-216-295-00	METAL GLAZE 0 5% 1/10W	
JR03	1-216-295-00	METAL GLAZE 0 5% 1/10W		R46	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
JR08	1-216-295-00	METAL GLAZE 0 5% 1/10W		R47	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
JR09	1-216-295-00	METAL GLAZE 0 5% 1/10W		R49	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
JR11	1-216-295-00	METAL GLAZE 0 5% 1/10W		R50	1-216-296-00	METAL GLAZE 0 5% 1/8W	
JR14	1-216-296-00	METAL GLAZE 0 5% 1/8W		<VARIABLE RESISTOR>			
JR17	1-216-295-00	METAL GLAZE 0 5% 1/10W		RV1	1-238-012-11	RES, ADJ, CARBON 1K	
JR18	1-216-296-00	METAL GLAZE 0 5% 1/8W		<CRYSTAL>			
JR19	1-216-296-00	METAL GLAZE 0 5% 1/8W		X1	1-579-266-31	CRYSTAL VIBRATOR	
JR20	1-216-296-00	METAL GLAZE 0 5% 1/8W		X2	1-577-364-11	VIBRATOR, CERAMIC	
JR21	1-216-296-00	METAL GLAZE 0 5% 1/8W		*****			
JR23	1-216-295-00	METAL GLAZE 0 5% 1/10W		*1-638-391-11	H1 BOARD		
JR24	1-216-296-00	METAL GLAZE 0 5% 1/8W			*****		
JR25	1-216-296-00	METAL GLAZE 0 5% 1/8W		<CAPACITOR>			
JR26	1-216-296-00	METAL GLAZE 0 5% 1/8W		C1651	1-102-106-00	CERAMIC 100PF 10% 50V	
JR201	1-216-295-00	METAL GLAZE 0 5% 1/10W		C1652	1-102-106-00	CERAMIC 100PF 10% 50V	
JR204	1-216-295-00	METAL GLAZE 0 5% 1/10W		C1653	1-102-074-00	CERAMIC 0.001MF 10% 50V	
JR207	1-216-295-00	METAL GLAZE 0 5% 1/10W		C1655	1-102-074-00	CERAMIC 0.001MF 10% 50V	
JR208	1-216-295-00	METAL GLAZE 0 5% 1/10W		<CONNECTOR>			
JR211	1-216-295-00	METAL GLAZE 0 5% 1/10W		H1-1	*1-568-881-51	PIN, CONNECTOR 6P	
JR213	1-216-295-00	METAL GLAZE 0 5% 1/10W		H1-02	1-568-678-11	TERMINAL BLOCK, S 3P	
JR219	1-216-296-00	METAL GLAZE 0 5% 1/8W		H1-4	*1-568-879-51	PIN, CONNECTOR 4P	
JR220	1-216-295-00	METAL GLAZE 0 5% 1/10W		H1-05	1-562-837-11	JACK	
JR223	1-216-295-00	METAL GLAZE 0 5% 1/10W		H1-23	*1-568-879-51	PIN, CONNECTOR 4P	
R1	1-218-326-11	METAL GLAZE 470 5% 1/2W		H1-43	*1-564-512-11	PLUG, CONNECTOR 9P	
R3	1-216-049-00	METAL GLAZE 1K 5% 1/10W					
R4	1-216-025-00	METAL GLAZE 100 5% 1/10W					
R5	1-216-047-00	METAL GLAZE 820 5% 1/10W					



H1 H2 J1

REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
<RESISTOR>				C228	1-137-104-11	FILM 0.033MF	10% 250V
R1651	1-249-413-11	CARBON 470 5% 1/4W		C229	1-137-049-11	FILM 0.015MF	10% 400V
R1652	1-249-413-11	CARBON 470 5% 1/4W		C230	1-137-049-11	FILM 0.015MF	10% 400V
<SWITCH>				C231	1-124-902-00	ELECT 0.47MF	20% 50V
S1651	1-571-532-21	SWITCH, TACTIL		C232	1-124-907-11	ELECT 10MF	20% 50V
S1652	1-571-532-21	SWITCH, TACTIL		C233	1-163-005-11	CERAMIC CHIP 470PF	10% 50V
S1653	1-571-532-21	SWITCH, TACTIL		C234	1-163-005-11	CERAMIC CHIP 470PF	10% 50V
*****				C235	1-163-005-11	CERAMIC CHIP 470PF	10% 50V
*1-638-392-11	H2 BOARD	*****		C236	1-163-005-11	CERAMIC CHIP 470PF	10% 50V
*4-374-987-01	GUIDE, LIGHT			C237	1-124-902-00	ELECT 0.47MF	20% 50V
*4-381-686-01	BRACKET (B), LIGHT GUIDE			C238	1-163-125-00	CERAMIC CHIP 220PF	5% 50V
<DIODE>				C239	1-126-103-11	ELECT 470MF	20% 16V
D1651	8-719-948-31	DIODE LD-201VR		C240	1-163-018-00	CERAMIC CHIP 0.0056MF	10% 50V
*4-201-076-01	HOLDER, LED; D1651			C241	1-163-018-00	CERAMIC CHIP 0.0056MF	10% 50V
D1652	8-719-948-31	DIODE LD-201VR		C242	1-163-033-00	CERAMIC CHIP 0.022MF	50V
*4-201-076-01	HOLDER, LED; D1652			C243	1-163-033-00	CERAMIC CHIP 0.022MF	50V
D1654	8-719-948-31	DIODE LD-201VR		C244	1-163-033-00	CERAMIC CHIP 0.022MF	50V
*4-201-076-01	HOLDER, LED; D1654			C245	1-163-033-00	CERAMIC CHIP 0.022MF	50V
<CONNECTOR>				C1401	1-124-907-11	ELECT 10MF	20% 50V
H2-2	*1-568-882-51	PIN, CONNECTOR 7P		C1402	1-126-103-11	ELECT 470MF	20% 16V
<IC>				C1403	1-163-003-11	CERAMIC CHIP 330PF	10% 50V
IC1651	8-741-101-75	IC SBX1610-11		C1404	1-137-098-11	FILM 0.1MF	10% 100V
<RESISTOR>				C1405	1-163-029-11	CERAMIC CHIP 0.0047MF	50V
R1662	1-249-413-11	CARBON 470 5% 1/4W		C1406	1-137-098-11	FILM 0.1MF	10% 100V
*****				C1407	1-124-910-11	ELECT 47MF	20% 50V
*A-1651-031-A	J1 BOARD, COMPLETE	*****		C1408	1-124-122-11	ELECT 100MF	20% 50V
<CAPACITOR>				C1409	1-126-233-11	ELECT 22MF	20% 50V
C203	1-124-925-11	ELECT 2.2MF	20% 50V	C1410	1-124-907-11	ELECT 10MF	20% 50V
C205	1-124-927-11	ELECT 4.7MF	20% 50V	C1411	1-124-907-11	ELECT 10MF	20% 50V
C206	1-124-925-11	ELECT 2.2MF	20% 50V	C1412	1-124-910-11	ELECT 47MF	20% 50V
C207	1-124-927-11	ELECT 4.7MF	20% 50V	C1413	1-124-910-11	ELECT 47MF	20% 50V
C213	1-126-233-11	ELECT 22MF	20% 50V	C1414	1-124-907-11	ELECT 10MF	20% 50V
C214	1-137-045-11	FILM 0.0068MF	10% 400V	C1415	1-137-098-11	FILM 0.1MF	10% 100V
C217	1-137-045-11	FILM 0.0068MF	10% 400V	C1416	1-137-098-11	FILM 0.1MF	10% 100V
C218	1-137-102-11	FILM 0.022MF	10% 250V	C1417	1-124-120-11	ELECT 220MF	20% 16V
C219	1-137-102-11	FILM 0.022MF	10% 250V	C1418	1-163-003-11	CERAMIC CHIP 330PF	10% 50V
C220	1-108-686-11	MYLAR 0.0033MF	10% 100V	C1419	1-163-003-11	CERAMIC CHIP 330PF	10% 50V
C221	1-108-686-11	MYLAR 0.0033MF	10% 100V	C1425	1-124-902-00	ELECT 0.47MF	20% 50V
C222	1-137-095-11	FILM 0.056MF	10% 100V	C1426	1-124-902-00	ELECT 0.47MF	20% 50V
C223	1-137-095-11	FILM 0.056MF	10% 100V	C1427	1-163-029-11	CERAMIC CHIP 0.0047MF	50V
C224	1-137-047-11	FILM 0.01MF	10% 400V	C1428	1-163-029-11	CERAMIC CHIP 0.0047MF	50V
C225	1-136-173-00	FILM 0.47MF	5% 50V	C1429	1-163-029-11	CERAMIC CHIP 0.0047MF	50V
C226	1-136-173-00	FILM 0.47MF	5% 50V	C1430	1-163-003-11	CERAMIC CHIP 330PF	10% 50V
C227	1-137-102-11	FILM 0.022MF	10% 250V	C1431	1-126-529-11	ELECT 0.47MF	20% 50V
				C1432	1-124-902-00	ELECT 0.47MF	20% 50V
				C1433	1-124-122-11	ELECT 100MF	20% 50V
				C1436	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V
				C1437	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V
				C1438	1-137-047-11	FILM 0.01MF	10% 400V
				C1439	1-137-047-11	FILM 0.01MF	10% 400V
				C1440	1-124-907-11	ELECT 10MF	20% 50V
				C1441	1-124-907-11	ELECT 10MF	20% 50V
				C1442	1-137-098-11	FILM 0.1MF	10% 100V
				C1443	1-137-098-11	FILM 0.1MF	10% 100V
				C1444	1-124-910-11	ELECT 47MF	20% 50V
				C1445	1-102-824-00	CERAMIC 470PF	5% 50V
				C1446	1-102-824-00	CERAMIC 470PF	5% 50V
				C1501	1-124-927-11	ELECT 4.7MF	20% 50V
				C1502	1-124-903-11	ELECT 1MF	20% 50V
				C1503	1-108-680-11	MYLAR 0.001MF	10% 100V
				C1504	1-124-910-11	ELECT 47MF	20% 50V
				C1505	1-137-094-11	FILM 0.047MF	10% 100V
				C1507	1-108-686-11	MYLAR 0.0033MF	10% 100V



J1

REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
C1508	1-124-903-11	ELECT 1MF	20% 50V	<TRANSISTOR>			
C1509	1-124-903-11	ELECT 1MF	20% 50V	Q201	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
C1511	1-124-927-11	ELECT 4.7MF	20% 50V	Q202	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
C1512	1-137-045-11	FILM 0.0068MF	10% 400V	Q1401	8-729-216-22	TRANSISTOR 2SA1162-G	
C1513	1-163-105-00	CERAMIC CHIP 33PF	5% 50V	Q1402	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
C1514	1-137-102-11	FILM 0.022MF	10% 250V	Q1403	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
C1515	1-102-117-00	CERAMIC 820PF	10% 50V	Q1404	8-729-216-22	TRANSISTOR 2SA1162-G	
<DIODE>				<RESISTOR>			
D201	8-719-110-14	DIODE RD9.1ES-B3		R201	1-216-079-00	METAL GLAZE 18K 5%	1/10W
D202	8-719-110-14	DIODE RD9.1ES-B3		R202	1-216-206-00	METAL GLAZE 2.2K 5%	1/8W
D205	8-719-110-03	DIODE RD7.5ES-B2		R203	1-216-075-00	METAL GLAZE 12K 5%	1/10W
D206	8-719-110-03	DIODE RD7.5ES-B2		R204	1-216-085-00	METAL GLAZE 33K 5%	1/10W
D1401	8-719-110-03	DIODE RD7.5ES-B2		R205	1-216-085-00	METAL GLAZE 33K 5%	1/10W
D1403	8-719-110-03	DIODE RD7.5ES-B2		R206	1-216-061-00	METAL GLAZE 3.3K 5%	1/10W
D1404	8-719-110-03	DIODE RD7.5ES-B2		R207	1-216-061-00	METAL GLAZE 3.3K 5%	1/10W
D1405	8-719-110-03	DIODE RD7.5ES-B2		R208	1-216-077-00	METAL GLAZE 15K 5%	1/10W
D1406	8-719-110-03	DIODE RD7.5ES-B2		R209	1-216-081-00	METAL GLAZE 22K 5%	1/10W
D1407	8-719-921-77	DIODE MT2N-10C		R210	1-216-077-00	METAL GLAZE 15K 5%	1/10W
D1408	8-719-110-14	DIODE RD9.1ES-B3		R211	1-216-097-00	METAL GLAZE 100K 5%	1/10W
D1409	8-719-110-14	DIODE RD9.1ES-B3		R212	1-216-081-00	METAL GLAZE 22K 5%	1/10W
D1410	8-719-110-14	DIODE RD9.1ES-B3		R213	1-216-077-00	METAL GLAZE 15K 5%	1/10W
D1415	8-719-110-03	DIODE RD7.5ES-B2		R214	1-216-033-00	METAL GLAZE 220 5%	1/10W
D1418	8-719-110-03	DIODE RD7.5ES-B2		R215	1-216-081-00	METAL GLAZE 22K 5%	1/10W
D1419	8-719-110-03	DIODE RD7.5ES-B2		R216	1-216-081-00	METAL GLAZE 22K 5%	1/10W
D1420	8-719-110-03	DIODE RD7.5ES-B2		R217	1-216-077-00	METAL GLAZE 15K 5%	1/10W
D1421	8-719-110-03	DIODE RD7.5ES-B2		R218	1-216-033-00	METAL GLAZE 220 5%	1/10W
D1422	8-719-110-03	DIODE RD7.5ES-B2		R219	1-216-073-00	METAL GLAZE 10K 5%	1/10W
D1423	8-719-110-03	DIODE RD7.5ES-B2		R220	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
D1424	8-719-110-03	DIODE RD7.5ES-B2		R221	1-216-041-00	METAL GLAZE 470 5%	1/10W
D1425	8-719-110-03	DIODE RD7.5ES-B2		R222	1-216-041-00	METAL GLAZE 470 5%	1/10W
D1426	8-719-110-03	DIODE RD7.5ES-B2		R223	1-216-049-00	METAL GLAZE 1K 5%	1/10W
D1501	8-719-300-33	DIODE RU-3AM		R224	1-216-049-00	METAL GLAZE 1K 5%	1/10W
D1502	8-719-911-19	DIODE 1SS119		R225	1-216-049-00	METAL GLAZE 1K 5%	1/10W
D1503	8-719-911-19	DIODE 1SS119		R226	1-216-049-00	METAL GLAZE 1K 5%	1/10W
D1504	8-719-911-19	DIODE 1SS119		R227	1-216-033-00	METAL GLAZE 220 5%	1/10W
D1505	8-719-911-19	DIODE 1SS119		R228	1-216-033-00	METAL GLAZE 220 5%	1/10W
D1506	8-719-982-33	DIODE MT2J-36D		R229	1-216-075-00	METAL GLAZE 12K 5%	1/10W
D1507	8-719-911-19	DIODE 1SS119		R230	1-216-079-00	METAL GLAZE 18K 5%	1/10W
D1510	8-719-911-19	DIODE 1SS119		R231	1-216-073-00	METAL GLAZE 10K 5%	1/10W
<IC>				R232	1-216-073-00	METAL GLAZE 10K 5%	1/10W
IC201	8-759-013-17	IC TDA6200		R233	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
IC1401	8-752-053-17	IC CXA1114P		R234	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
IC1402	8-759-946-32	IC TEA2014A		R235	1-216-295-00	METAL GLAZE 0 5%	1/10W
IC1403	8-759-140-53	IC UPD4053BC		R236	1-216-295-00	METAL GLAZE 0 5%	1/10W
IC1501	8-759-942-16	IC TEA2031A		R240	1-216-033-00	METAL GLAZE 220 5%	1/10W
<CONNECTOR>				R241	1-216-091-00	METAL GLAZE 56K 5%	1/10W
CN1401	1-565-838-11	JACK BLOCK, PIN 2P		R242	1-216-091-00	METAL GLAZE 56K 5%	1/10W
J45	*1-568-878-51	PIN, CONNECTOR 3P		R243	1-216-075-00	METAL GLAZE 12K 5%	1/10W
J1-41	*1-566-641-11	CONNECTOR, HINGE (TAB) 18P		R244	1-216-067-00	METAL GLAZE 5.6K 5%	1/10W
J1-43	*1-564-524-11	PLUG, CONNECTOR 9P		R245	1-216-075-00	METAL GLAZE 12K 5%	1/10W
J1-44	*1-564-527-11	PLUG, CONNECTOR 12P		R246	1-216-067-00	METAL GLAZE 5.6K 5%	1/10W
J1-51	*1-566-641-11	CONNECTOR, HINGE (TAB) 18P		R247	1-216-075-00	METAL GLAZE 12K 5%	1/10W
<JACK>				R248	1-216-067-00	METAL GLAZE 5.6K 5%	1/10W
J1402	1-561-534-41	SOCKET 21P		R249	1-216-075-00	METAL GLAZE 12K 5%	1/10W
J1403	1-561-534-41	SOCKET 21P		R250	1-216-067-00	METAL GLAZE 5.6K 5%	1/10W
				R1400	1-216-295-00	METAL GLAZE 0 5%	1/10W
				R1401	1-216-023-00	METAL GLAZE 82 5%	1/10W
				R1402	1-216-170-00	METAL GLAZE 68 5%	1/8W
				R1403	1-216-089-00	METAL GLAZE 47K 5%	1/10W
				R1404	1-216-178-00	METAL GLAZE 150 5%	1/8W







REF.NO.	PART NO.	DESCRIPTION			REMARK	REF.NO.	PART NO.	DESCRIPTION			REMARK
C17	1-124-907-11	ELECT	10MF	20%	50V	R2	1-216-043-00	METAL GLAZE	560	5%	1/10W
C18	1-137-047-11	FILM	0.01MF	10%	400V	R3	1-216-043-00	METAL GLAZE	560	5%	1/10W
C19	1-137-047-11	FILM	0.01MF	10%	400V						
C20	1-126-233-11	ELECT	22MF	20%	50V	R5	1-216-045-00	METAL GLAZE	680	5%	1/10W
C21	1-126-233-11	ELECT	22MF	20%	50V	R6	1-216-043-00	METAL GLAZE	560	5%	1/10W
						R7	1-216-043-00	METAL GLAZE	560	5%	1/10W
C22	1-137-098-11	FILM	0.1MF	10%	100V	R9	1-216-073-00	METAL GLAZE	10K	5%	1/10W
C23	1-137-031-11	FILM	0.22MF	10%	100V	R11	1-216-095-00	METAL GLAZE	82K	5%	1/10W
C24	1-124-034-51	ELECT	33MF	20%	16V						
C25	1-137-102-11	FILM	0.022MF	10%	250V	R12	1-216-097-00	METAL GLAZE	100K	5%	1/10W
C26	1-137-094-11	FILM	0.047MF	10%	100V	R13	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W
						R15	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W
C27	1-124-903-11	ELECT	1MF	20%	50V	R16	1-216-097-00	METAL GLAZE	100K	5%	1/10W
C28	1-163-109-00	CERAMIC CHIP	47PF	5%	50V	R17	1-216-097-00	METAL GLAZE	100K	5%	1/10W
C29	1-124-903-11	ELECT	1MF	20%	50V						
C30	1-124-903-11	ELECT	1MF	20%	50V	R18	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W
C31	1-137-047-11	FILM	0.01MF	10%	400V	R19	1-216-097-00	METAL GLAZE	100K	5%	1/10W
						R20	1-216-075-00	METAL GLAZE	12K	5%	1/10W
C32	1-130-479-00	MYLAR	0.0047MF	5%	50V	R22	1-216-099-00	METAL GLAZE	120K	5%	1/10W
C33	1-163-081-00	CERAMIC CHIP	0.22MF		25V	R24	1-216-089-00	METAL GLAZE	47K	5%	1/10W
C34	1-137-031-11	FILM	0.22MF	10%	100V						
C35	1-124-907-11	ELECT	10MF	20%	50V	R25	1-216-077-00	METAL GLAZE	15K	5%	1/10W
C36	1-163-119-00	CERAMIC CHIP	120PF	5%	50V						
							<VARIABLE RESISTOR>				
C37	1-124-477-11	ELECT	47MF	20%	16V	RV1	1-238-016-11	RES, ADJ, CARBON	10K		
C38	1-124-477-11	ELECT	47MF	20%	16V	RV2	1-238-019-11	RES, ADJ, CARBON	47K		
C39	1-163-133-00	CERAMIC CHIP	470PF	5%	50V						
							*A-4542-098-A	MAIN BOARD, COMPLETE			
							<CAPACITOR>				
						C1	1-126-205-11	ELECT CHIP	47MF	20%	6.3V
						C2	1-163-031-11	CERAMIC CHIP	0.01MF		50V
						C3	1-163-038-00	CERAMIC CHIP	0.1MF		25V
D3	8-719-400-18	DIODE MA152WK				C4	1-126-204-11	ELECT CHIP	47MF	20%	16V
						C5	1-126-204-11	ELECT CHIP	47MF	20%	16V
						C6	1-126-204-11	ELECT CHIP	47MF	20%	16V
						C7	1-126-204-11	ELECT CHIP	47MF	20%	16V
IC1	8-759-003-90	IC TBA129				C8	1-163-038-00	CERAMIC CHIP	0.1MF		25V
IC2	8-759-003-90	IC TBA129				C9	1-163-031-11	CERAMIC CHIP	0.01MF		50V
IC3	8-759-030-48	IC TDA6600-2				C11	1-163-001-11	CERAMIC CHIP	220PF	10%	50V



The components identified by  
shading and mark **Δ** are critical  
for safety.  
Replace only with part number  
specified.

**MAIN SW CN**

REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
C58	1-163-227-11	CERAMIC CHIP 10PF	5% 50V	R15	1-216-071-00	METAL GLAZE 8.2K 5% 1/10W	
C59	1-163-031-11	CERAMIC CHIP 0.01MF	50V	R16	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
C60	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	R17	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
C61	1-163-107-00	CERAMIC CHIP 39PF	5% 50V	R18	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
C62	1-163-093-00	CERAMIC CHIP 10PF	5% 50V	R19	1-216-025-00	METAL GLAZE 100 5% 1/10W	
C63	1-163-109-00	CERAMIC CHIP 47PF	5% 50V	R20	1-216-111-00	METAL GLAZE 390K 5% 1/10W	
C64	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	R21	1-216-025-00	METAL GLAZE 100 5% 1/10W	
C65	1-163-251-11	CERAMIC CHIP 100PF	5% 50V	R22	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
<CONNECTOR>				R24	1-216-691-11	METAL CHIP 47K 0.50% 1/10W	
CNP1	1-506-906-11	PIN, CONNECTOR 5P		R25	1-216-661-11	METAL CHIP 2.7K 0.50% 1/10W	
CNP3	*1-564-517-11	PLUG, CONNECTOR 2P		R26	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
CNP4	*1-564-517-11	PLUG, CONNECTOR 2P		R27	1-216-022-00	METAL GLAZE 75 5% 1/10W	
<DIODE>				R28	1-216-022-00	METAL GLAZE 75 5% 1/10W	
D9	8-719-105-28	DIODE RD2.4M-B		R29	1-216-017-00	METAL GLAZE 47 5% 1/10W	
D10	8-719-106-08	DIODE RD6.2M-B2		R51	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W	
D11	8-719-939-02	DIODE SVC203CP		R52	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W	
D51	8-719-939-02	DIODE SVC203CP		R53	1-216-025-00	METAL GLAZE 100 5% 1/10W	
<IC>				R54	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
IC1	8-759-998-71	IC BA3308F		R55	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
<COIL>				R56	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
L11	1-406-333-11	COIL (OSC)		R57	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
L12	1-410-392-11	INDUCTOR CHIP 82UH		R58	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
L13	1-412-400-31	INDUCTOR 68UH		R59	1-216-025-00	METAL GLAZE 100 5% 1/10W	
L51	1-406-334-11	COIL (OSC)		R60	1-216-111-00	METAL GLAZE 390K 5% 1/10W	
L52	1-410-391-11	INDUCTOR CHIP 68UH		R61	1-216-025-00	METAL GLAZE 100 5% 1/10W	
L53	1-412-400-31	INDUCTOR 68UH		R62	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
<TRANSISTOR>				R64	1-216-691-11	METAL CHIP 47K 0.50% 1/10W	
Q12	8-729-200-87	TRANSISTOR 2SC2714-Y		R65	1-216-661-11	METAL CHIP 2.7K 0.50% 1/10W	
Q13	8-729-216-22	TRANSISTOR 2SA1162-G		R66	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
Q14	8-729-230-49	TRANSISTOR 2SC2712-YG		R67	1-216-022-00	METAL GLAZE 75 5% 1/10W	
Q15	8-729-230-49	TRANSISTOR 2SC2712-YG		R68	1-216-022-00	METAL GLAZE 75 5% 1/10W	
Q52	8-729-200-87	TRANSISTOR 2SC2714-Y		R69	1-216-017-00	METAL GLAZE 47 5% 1/10W	
Q53	8-729-216-22	TRANSISTOR 2SA1162-G		R71	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
Q54	8-729-230-49	TRANSISTOR 2SC2712-YG		R81	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
Q55	8-729-230-49	TRANSISTOR 2SC2712-YG		<VARIABLE RESISTOR>			
<RESISTOR>				RV11	1-238-989-11	RES, ADJ, METAL GLAZE 2.2K	
JW2	1-216-296-00	METAL GLAZE 0 5% 1/8W		RV51	1-238-989-11	RES, ADJ, METAL GLAZE 2.2K	
JW3	1-216-295-00	METAL GLAZE 0 5% 1/10W		*****			
JW4	1-216-295-00	METAL GLAZE 0 5% 1/10W		*1-643-141-11	SW BOARD	*****	
JW5	1-216-296-00	METAL GLAZE 0 5% 1/8W		<CONNECTOR>			
JW6	1-216-296-00	METAL GLAZE 0 5% 1/8W		CNP2	*1-564-520-11	PLUG, CONNECTOR 5P	
JW8	1-216-296-00	METAL GLAZE 0 5% 1/8W		<IC LINK>			
JW9	1-216-295-00	METAL GLAZE 0 5% 1/10W		ICP1	Δ 1-532-984-11	LINK, IC 2A	
R1	1-216-133-00	METAL GLAZE 3.3M 5% 1/10W		<SWITCH>			
R5	1-216-043-00	METAL GLAZE 560 5% 1/10W		S1	1-570-913-11	SWITCH, PUSH	
R6	1-216-043-00	METAL GLAZE 560 5% 1/10W		S2	1-554-061-00	SWITCH, SLIDE	
R8	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W		*****			
R9	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W		*1-643-965-11	CN BOARD	*****	
R11	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W		<CONNECTOR>			
R12	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W					
R13	1-216-025-00	METAL GLAZE 100 5% 1/10W					
R14	1-216-089-00	METAL GLAZE 47K 5% 1/10W					



The components identified by shading and mark  $\Delta$  are critical for safety.  
Replace only with part number specified.

**CN** **LED**

REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
CNP5	1-506-906-11	PIN, CONNECTOR 5P			1-452-094-00	MAGNET, ROTATABLE DISK; 15MM $\phi$	
*****					$\Delta$ 1-460-091-11	COIL DEGAUSS	
	*1-643-140-11	LED BOARD			1-544-727-11	SPEAKER (7.5X13CM)	
		*****			$\Delta$ 1-590-501-11	CORD, POWER (WITH NOISE FILTER)	
					8-913-822-90	TRANSMITTER TMR-D1003 SET	
		<CAPACITOR>		V901	$\Delta$ 8-733-231-05	PICTURE TUBE (A59JWC61X)	
C101	1-163-031-11	CERAMIC CHIP 0.01MF	50V	*****			
C103	1-163-031-11	CERAMIC CHIP 0.01MF	50V			ACCESSORIES AND PACKING MATERIALS	
C104	1-126-395-11	ELECT CHIP 22MF	20% 16V			*****	
C105	1-163-038-00	CERAMIC CHIP 0.1MF	25V				
C106	1-126-395-11	ELECT CHIP 22MF	20% 16V		3-755-297-11	MANUAL, INSTRUCTION	
C107	1-163-038-00	CERAMIC CHIP 0.1MF	25V		*4-034-981-01	CUSHION (UPPER) (ASSY)	
		<CONNECTOR>			*4-035-035-01	CUSHION (LOWER) (ASSY)	
CNP101	*1-564-517-11	PLUG, CONNECTOR 2P			*4-035-040-01	INDIVIDUAL CARTON	
		<DIODE>			*4-380-340-01	BAG, PROTECTION	
D101	8-719-992-10	DIODE 1R5BF-A			8-953-467-91	HEADPHONE MDR-1F310/1 SET	
D102	8-719-992-10	DIODE 1R5BF-A				REMOTE COMMANDER	
D103	8-719-992-10	DIODE 1R5BF-A			1-465-796-11	CONTROL UNIT, REMOTE (RM-816)	
D104	8-719-992-10	DIODE 1R5BF-A			4-031-670-01	COVER, POCKET (FOR RM-816)	
D105	8-719-992-10	DIODE 1R5BF-A					
D106	8-719-992-10	DIODE 1R5BF-A					
D107	8-719-992-10	DIODE 1R5BF-A					
D108	8-719-992-10	DIODE 1R5BF-A					
		<COIL>					
L101	1-412-400-31	INDUCTOR 68UH					
		<TRANSISTOR>					
Q101	8-729-216-22	TRANSISTOR 2SA1162-G					
Q102	8-729-140-75	TRANSISTOR 2SD999-CLCK					
Q103	8-729-216-22	TRANSISTOR 2SA1162-G					
Q104	8-729-140-75	TRANSISTOR 2SD999-CLCK					
Q107	8-729-230-49	TRANSISTOR 2SC2712-YG					
		<RESISTOR>					
JW101	1-216-295-00	METAL GLAZE 0 5% 1/10W					
R101	1-216-022-00	METAL GLAZE 75 5% 1/10W					
R102	1-216-071-00	METAL GLAZE 8.2K 5% 1/10W					
R104	1-216-025-00	METAL GLAZE 100 5% 1/10W					
R105	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W					
R106	1-216-003-11	METAL GLAZE 12 5% 1/10W					
R107	1-216-025-00	METAL GLAZE 100 5% 1/10W					
R108	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W					
R109	1-216-003-11	METAL GLAZE 12 5% 1/10W					
		<VARIABLE RESISTOR>					
RV101	1-238-989-11	RES, ADJ, METAL GLAZE 2.2K					
*****							
MISCELLANEOUS							
*****							
$\Delta$ 1-451-311-21	DEFLECTION YOKE (Y25FXA)						
1-452-032-00	MAGNET, DISK; 10MM $\phi$						



## MEMO



# ACCESSORY

## MDR-IF310

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### SPECIFICATIONS

#### General

Modulation system	Frequency modulation
Carrier frequency	Right 2.8 MHz
	Left 2.3 MHz
Effective range	Up to approx. 7 m (23 ft.)
Frequency response	18 – 22,000 Hz
Distortion	Less than 1% at 1 kHz

#### Headphones MDR-IF310

Power source	DC 3 V, 2 × R6 (size AA) battery
Weight	Approx. 170 g (6.0 oz.) incl. batteries

Design and specifications subject to change  
without notice.

## CORDLESS STEREO HEADPHONES

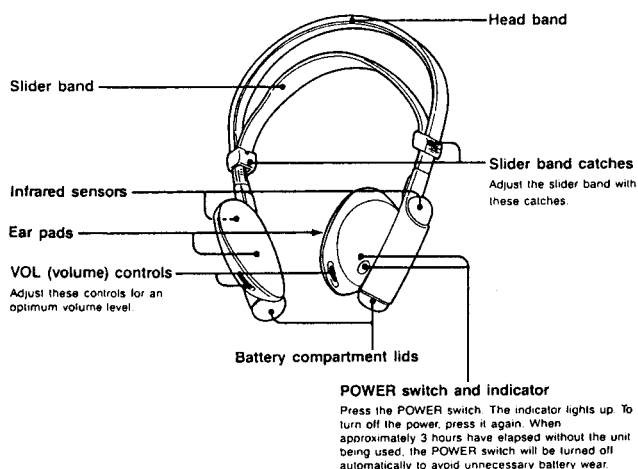


## SECTION 1 GENERAL

This section is extracted from instruction manual.

### Parts Identification

#### Headphones



### Power Source of the Headphones

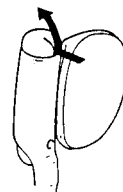
Use two R6 (size AA) batteries for the headphones. Be sure to use the same type of batteries for both right and left battery compartments.

**When the batteries become weak**  
The POWER indicator dims, and a hissing noise increases. In such a case, replace both batteries.  
The approximate battery life for continuous operation is as follows:

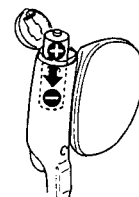
Sony alkaline battery AM3(N):	120 hours
Sony battery SUM-3(NS):	60 hours

#### Battery Installation

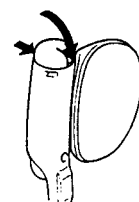
- 1 Open both battery compartments' lids.



- 2 Insert the batteries with the correct polarity.



- 3 Close the battery compartments' lids.

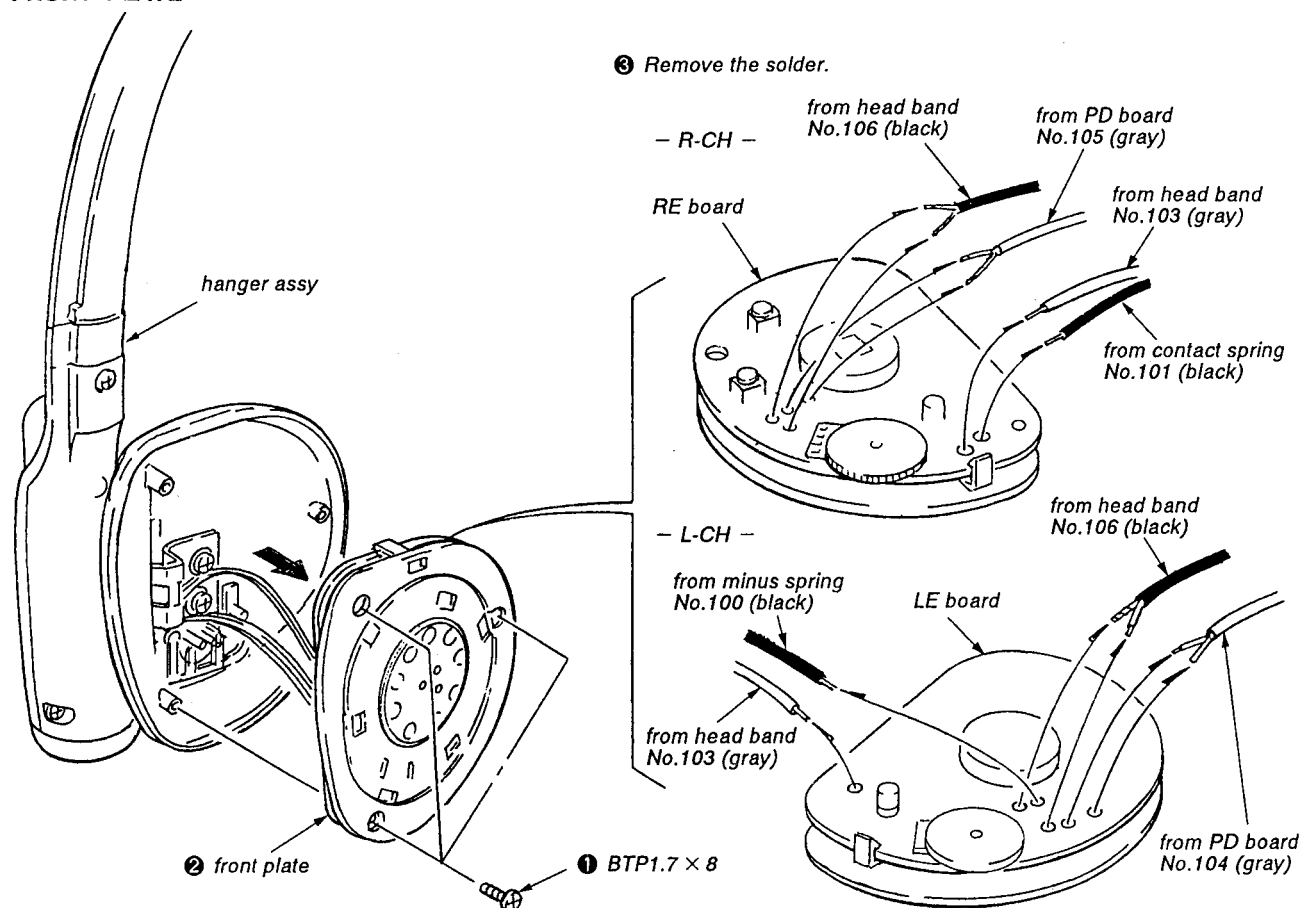




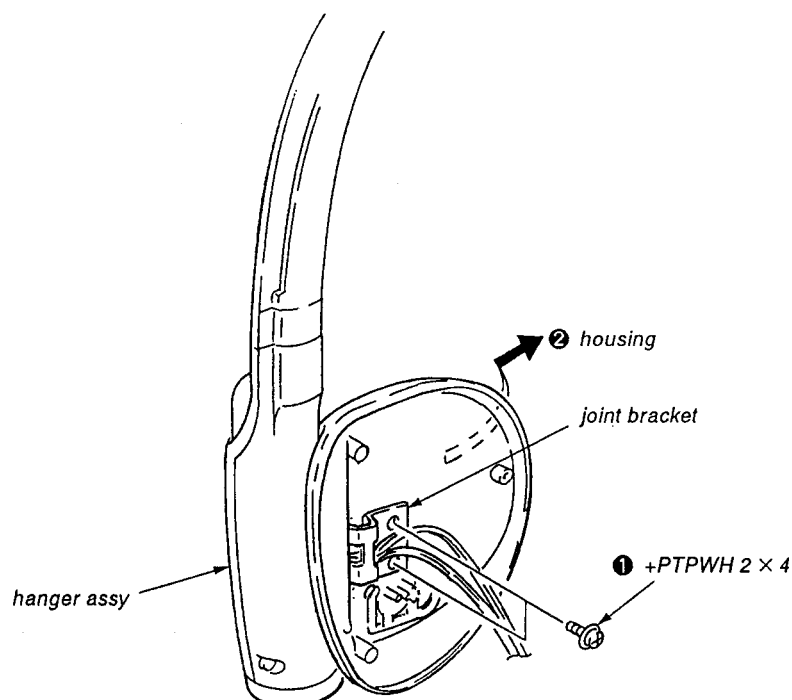
## SECTION 2 DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

### FRONT PLATE



### HOUSING









## SECTION 3 ADJUSTMENTS

KV-H2511D  
MDR-IF310/RM-816

KV-H2511D  
MDR-IF310/RM-816

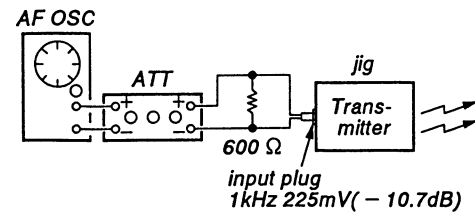
### Note:

1. On adjusting, use the transmitter (TMR-IF5) as a jig.
2. L-ch adjustment should be completed before performing R-ch adjustment.

0 dB = 0.775 V

### [Receiving Frequency Adjustment]

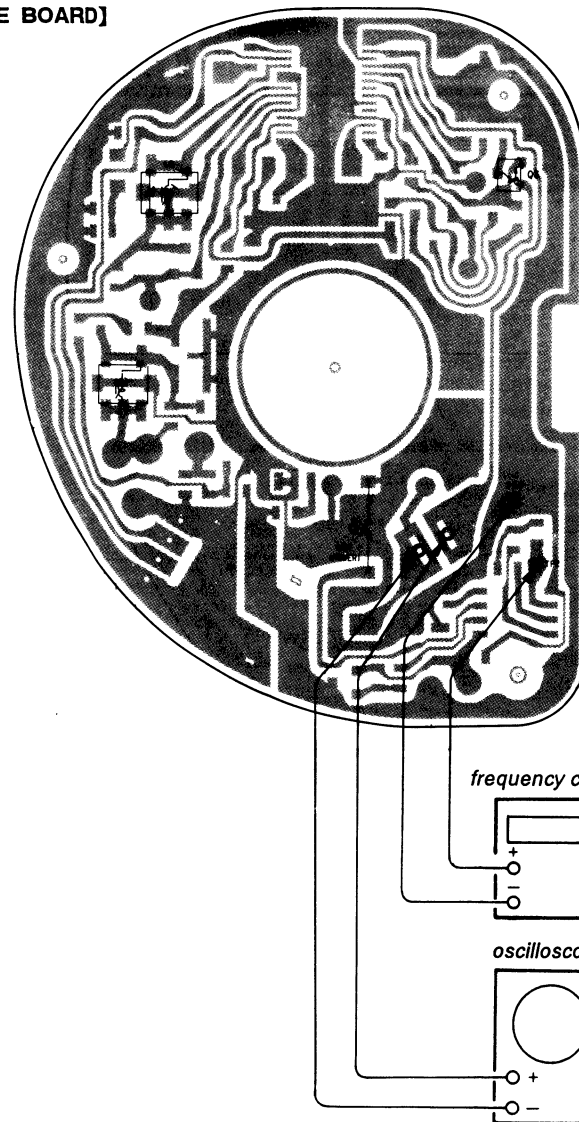
#### Preparation:



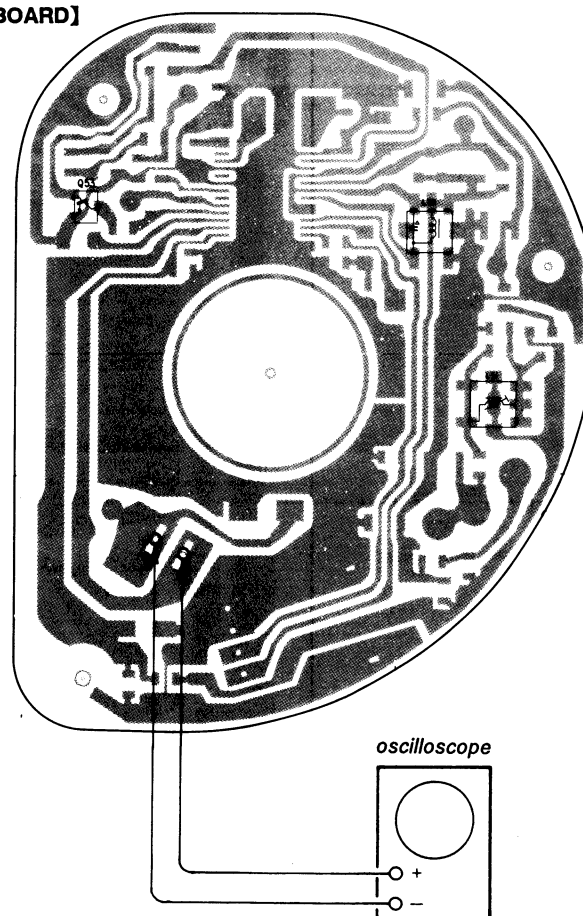
1. Feed a signal to jig (TMR-IF5) and connect a power supply.
2. Volume control: Optional position.
3. Short-circuit: Q3 (Q53) Base – Emitter (Ground)

### [Connection and Adjustment Location]

#### [RE BOARD]



#### [LE BOARD]



### Procedure:

1. Connect an oscilloscope to SP1 or SP51.
2. Turn on the power switch on the headphones.
3. Adjust to make minute input level with changing the direction of the emitting position of jig so that the noise appears on the waveform.
4. Adjust with L5 (L-ch) or L55 (R-ch) to maximize the reading on the oscilloscope.
5. Adjust with L1 (L-ch) or L51 (R-ch) to maximize the reading on the oscilloscope.
6. Release the short-circuit position.  
Q3 (Q53) Base – Emitter (Ground)

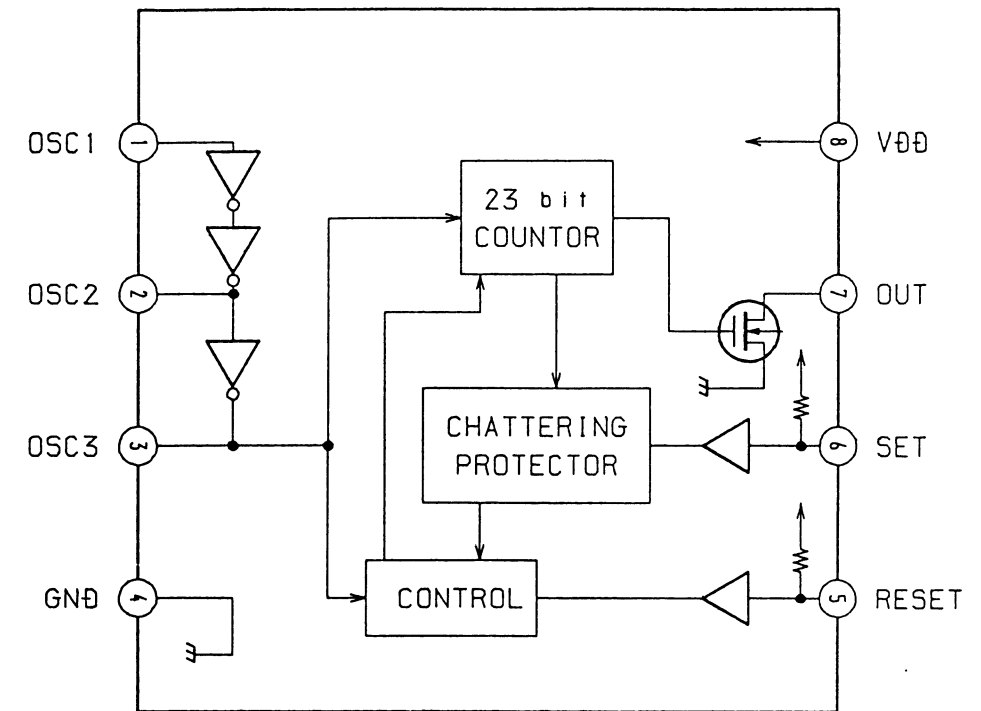
### [Timer Clock Frequency Check]

1. Connect a frequency counter to TP2 and TP (GND).
2. Check the reading on the frequency counter becomes to the checking value.  
Checking value: 300 Hz – 390 Hz.

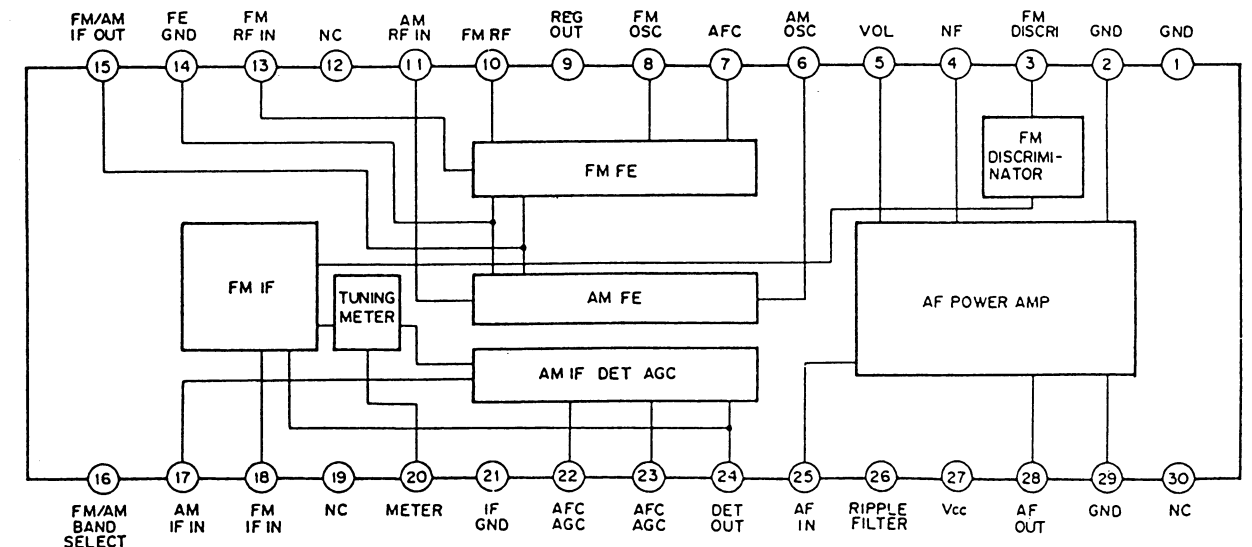
## SECTION 4 DIAGRAMS

### • IC Block Diagrams

#### IC2 BU2305F



#### IC21, 51 CXA1280N





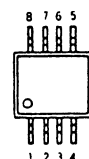
## 4-1. PRINTED WIRING BOARDS

## ● Semiconductor Location

Ref. No.	Location
D1	G-3
D2	E-2
D52	D-12
IC1	C-4
IC2	H-5
IC51	D-10
PH101	A-5, A-8
PH102	A-6, A-9
Q2	H-4
Q3	D-5
Q4	D-4
Q5	D-5
Q51	E-13
Q53	D-9
Q54	C-9
Q55	D-9

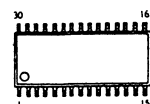
## ● Semiconductor Lead Layout

## BU2305F



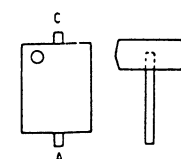
(TOP VIEW)

## CXA1280N

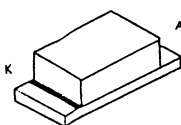


(TOP VIEW)

## PP601-1

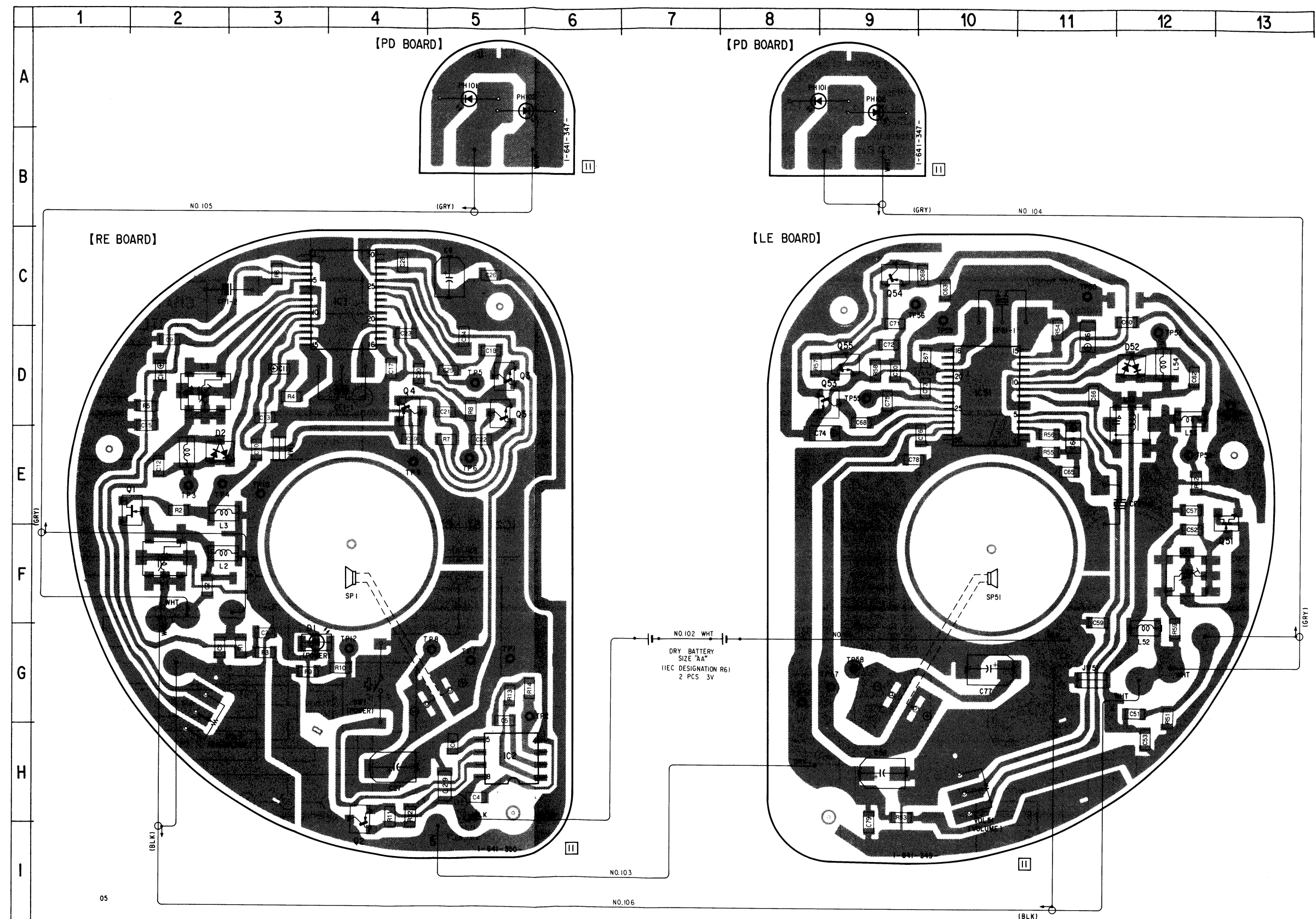


## CL-150R-CD

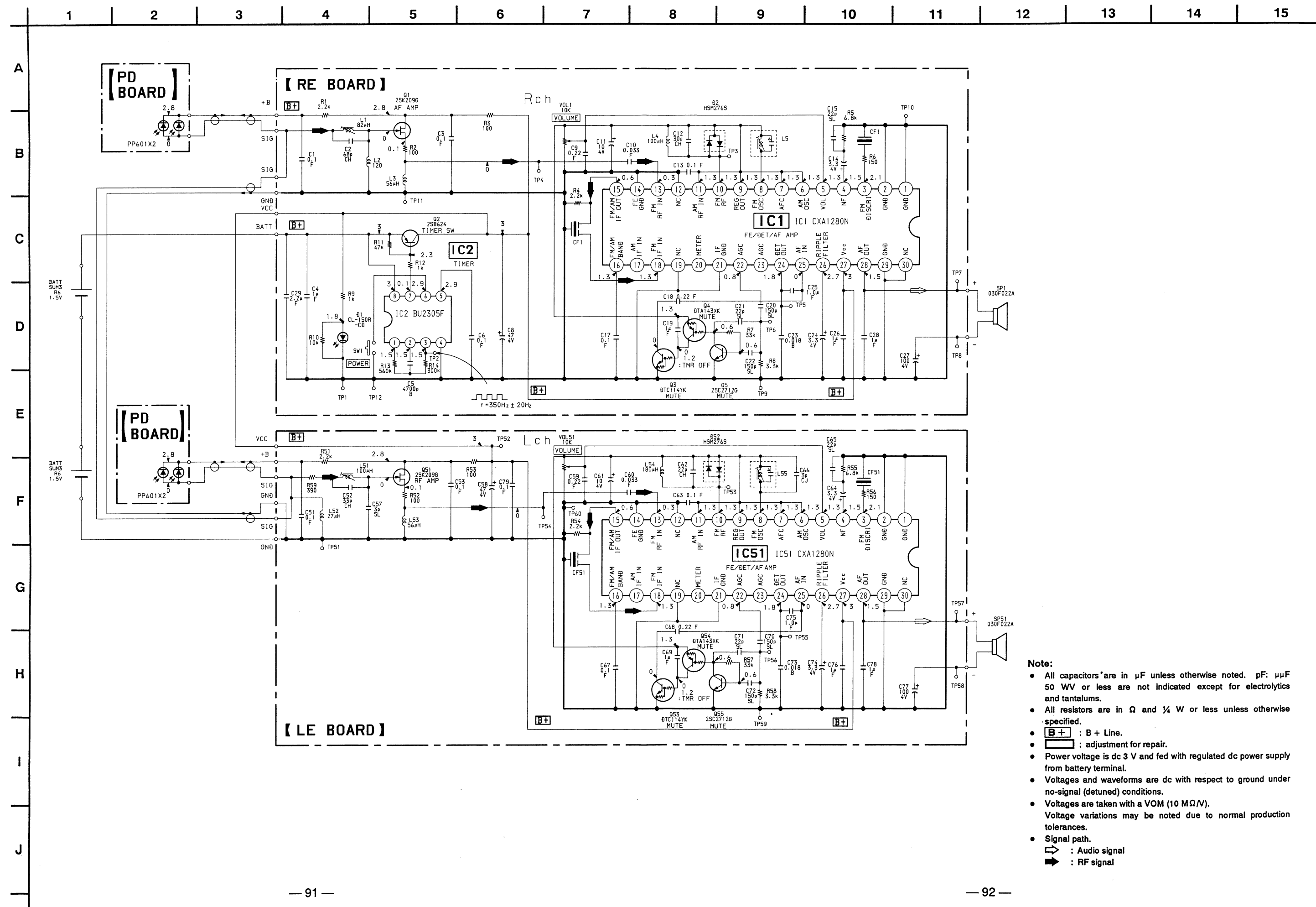


## Note:

- — : parts extracted from the component side.
- : Through hole.
- ▨ : Pattern on the side which is seen.





KV-H2511D  
MDR-IF310/RM-816KV-H2511D  
MDR-IF310/RM-816



SECTION 5  
EXPLODED VIEW

LE PD

SECTION 6  
ELECTRICAL PARTS LIST

## NOTE:

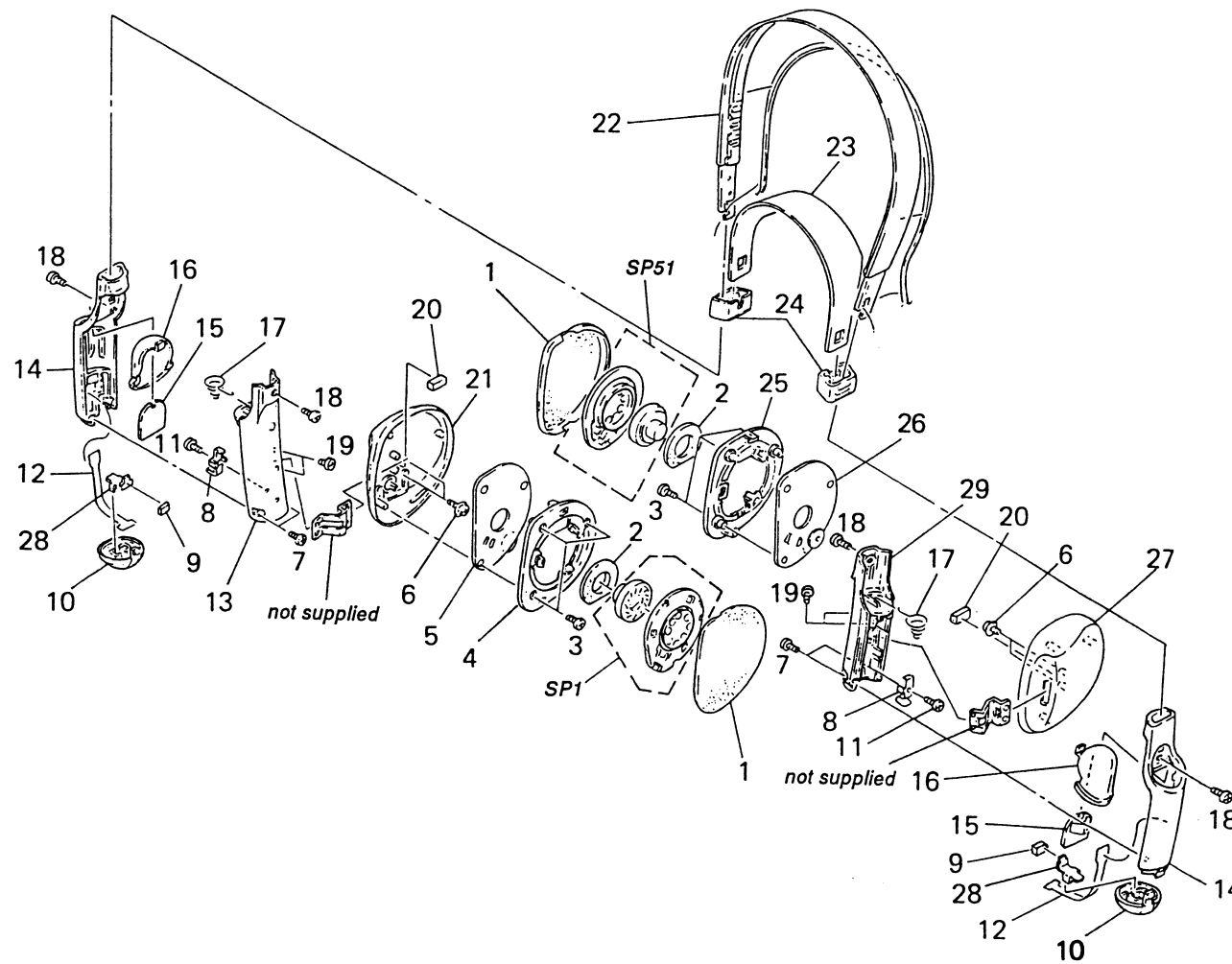
- -XX and -X mean standardized parts, so they may have some difference from the original one.

- Color Indication of Appearance Parts  
Example:  
KNOB, BALANCE (WHITE) ... (RED)

Parts Color      Cabinet's Color

- Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- The mechanical parts with no reference number in the exploded views are not supplied.



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	4-947-791-01	PAD, EAR		16	4-947-790-01	COVER, RAY CATCHER	
* 2	4-948-895-01	DAMPER		17	4-947-794-01	SPRING, MINUS	
3	3-318-203-31	SCREW (B1.7X8), TAPPING		18	3-318-203-11	SCREW (B1.7X6), TAPPING	
* 4	4-947-813-01	PLATE (R), FRONT		19	7-627-852-28	SCREW +P 1.7X3	
* 5	A-4542-062-A	RE BOARD, COMPLETE		20	4-947-796-01	CUSHION	
6	3-313-392-01	SCREW (2X4), + PTPWH		21	X-4941-959-1	HOUSING (R) ASSY	
7	3-318-203-11	SCREW (B1.7X6), TAPPING		* 22	4-947-809-01	BAND, HEAD	
8	4-947-795-01	SPRING, CONTACT		* 23	4-947-798-01	BAND, SLIDER	
9	9-911-838-XX	CUSHION		24	4-947-801-01	KNOB, SLIDER	
10	4-947-800-01	LID, BATTERY CASE		* 25	4-947-812-01	PLATE (L), FRONT	
11	7-627-552-07	SCREW (M1.7X2.5), TAPPING		* 26	A-4542-061-A	LE BOARD, COMPLETE	
12	4-947-789-01	SHEET		27	4-947-804-01	HOUSING (L)	
13	4-947-810-01	HANGER (R)		28	4-947-793-01	TERMINAL, PLUS	
14	4-947-808-01	CASE, BATTERY		29	4-947-811-01	HANGER (L)	
* 15	1-641-347-11	PC BOARD, PD		SP1	1-505-117-11	DRIVER UNIT (03F022A)	
				SP51	1-505-117-11	DRIVER UNIT (03F022A)	

## NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.

- -XX and -X mean standardized parts, so they may have some difference from the original one.

- RESISTORS  
All resistors are in ohms.  
METAL: Metal-film resistor  
METAL OXIDE: Metal Oxide-film resistor  
F: nonflammable

- Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- SEMICONDUCTORS  
In each case, u:  $\mu$ , for example:  
uA:  $\mu$ A..., uPA:  $\mu$ PA...,  
uPB:  $\mu$ PB..., uPC:  $\mu$ PC...,  
uPD:  $\mu$ PD...

- CAPACITORS  
uF:  $\mu$ F

- COILS  
uH:  $\mu$ H

When including parts by reference number, please include the board name.

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
*	A-4542-061-A	LE BOARD, COMPLETE *****				< JAMPER >	
	1-578-717-71	FILTER, CRYSTAL		JW51	1-216-296-00	METAL CHIP 0 5% 1/8W	
		< CAPACITOR >				< COIL >	
C51	1-163-038-00	CERAMIC CHIP 0.1uF	25V	L51	1-424-333-11	COIL	
C52	1-163-239-11	CERAMIC CHIP 33PF	5% 50V	L52	1-410-386-11	INDUCTOR CHIP 27uH	
C53	1-163-038-00	CERAMIC CHIP 0.1uF	25V	L53	1-410-390-11	INDUCTOR CHIP 56uH	
C57	1-163-086-00	CERAMIC CHIP 3PF	50V	L54	1-410-657-21	INDUCTOR CHIP 180uH	
C58	1-126-607-11	ELECT CHIP 47uF	20% 4V	L55	1-406-436-11	COIL (OSC)	
C59	1-164-222-11	CERAMIC CHIP 0.22uF	25V			< TRANSISTOR >	
C60	1-163-034-00	CERAMIC CHIP 0.033uF	50V	Q51	8-729-220-93	TRANSISTOR 2SK209-G	
C61	1-135-201-11	TANTALUM CHIP 10uF	20% 4V	Q53	8-729-900-52	TRANSISTOR DTC114YK	
C62	1-163-235-11	CERAMIC CHIP 22PF	5% 50V	Q54	8-729-906-45	TRANSISTOR DTA143XK	
C63	1-163-038-00	CERAMIC CHIP 0.1uF	25V	Q55	8-729-230-49	TRANSISTOR 2SC2712-YG	
C64	1-135-180-21	TANTALUM CHIP 3.3uF	20% 6.3V			< RESISTOR >	
C65	1-163-101-00	CERAMIC CHIP 22PF	5% 50V	R51	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
C66	1-163-220-11	CERAMIC CHIP 3PF	0.25PF 50V	R52	1-216-025-00	METAL CHIP 100 5% 1/10W	
C67	1-163-038-00	CERAMIC CHIP 0.1uF	25V	R53	1-216-025-00	METAL CHIP 100 5% 1/10W	
C68	1-164-222-11	CERAMIC CHIP 0.22uF	25V	R54	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
C69	1-164-346-11	CERAMIC CHIP 1uF	16V	R55	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
C70	1-163-121-00	CERAMIC CHIP 150PF	5% 50V	R56	1-216-029-00	METAL CHIP 150 5% 1/10W	
C71	1-163-101-00	CERAMIC CHIP 22PF	5% 50V	R57	1-216-085-00	METAL CHIP 33K 5% 1/10W	
C72	1-163-121-00	CERAMIC CHIP 150PF	5% 50V	R58	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
C73	1-163-024-00	CERAMIC CHIP 0.018uF	10% 50V	R59	1-216-039-00	METAL CHIP 390 5% 1/10W	
C74	1-135-180-21	TANTALUM CHIP 3.3uF	20% 6.3V			< VARIABLE RESISTOR >	
C75	1-164-346-11	CERAMIC CHIP 1uF	16V	VOL51	1-238-906-11	RES, VAR, CARBON 10K (VOL)	
C76	1-164-346-11	CERAMIC CHIP 1uF	16V	*****			
C77	1-126-209-11	ELECT CHIP 100uF	20% 4V	*	1-641-347-11	PD BOARD *****	
C78	1-164-346-11	CERAMIC CHIP 1uF	16V			< PHOTO DIODE >	
C79	1-163-038-00	CERAMIC CHIP 0.1uF	25V	PH101	8-719-975-20	PHOTO DIODE PP601-1	
		< DIODE >		PH102	8-719-975-20	PHOTO DIODE PP601-1	
D52	8-719-946-33	DIODE HSM276S		*****			
		< IC >					
IC51	8-759-605-59	IC CXA1280N					



RE

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
*	A-4542-062-A	RE BOARD, COMPLETE *****		L5	1-406-436-11	COIL (OSC)	
	1-578-717-71	FILTER, CRYSTAL				< TRANSISTOR >	
		< CAPACITOR >		Q1	8-729-220-93	TRANSISTOR 2SK209-G	
C1	1-163-038-00	CERAMIC CHIP 0.1uF	25V	Q2	8-729-141-48	TRANSISTOR 2SB624-BV345	
C2	1-163-113-00	CERAMIC CHIP 68PF	5% 50V	Q3	8-729-900-52	TRANSISTOR DTC114YK	
C3	1-163-038-00	CERAMIC CHIP 0.1uF	25V	Q4	8-729-906-45	TRANSISTOR DTA143XK	
C4	1-164-346-11	CERAMIC CHIP 1uF	16V	Q5	8-729-230-49	TRANSISTOR 2SC2712-YG	
C5	1-163-017-00	CERAMIC CHIP 0.0047uF	5% 50V			< RESISTOR >	
C6	1-163-038-00	CERAMIC CHIP 0.1uF	25V	R1	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
C8	1-126-607-11	ELECT CHIP 47uF	20% 4V	R2	1-216-025-00	METAL CHIP 100 5% 1/10W	
C9	1-164-222-11	CERAMIC CHIP 0.22uF	25V	R3	1-216-025-00	METAL CHIP 100 5% 1/10W	
C10	1-163-034-00	CERAMIC CHIP 0.033uF	50V	R4	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
C11	1-135-201-11	TANTALUM CHIP 10uF	20% 4V	R5	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
C12	1-163-104-00	CERAMIC CHIP 30PF	5% 50V	R6	1-216-029-00	METAL CHIP 150 5% 1/10W	
C13	1-163-038-00	CERAMIC CHIP 0.1uF	25V	R7	1-216-085-00	METAL CHIP 33K 5% 1/10W	
C14	1-135-180-21	TANTALUM CHIP 3.3uF	20% 6.3V	R8	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
C15	1-163-101-00	CERAMIC CHIP 22PF	5% 50V	R9	1-216-049-00	METAL CHIP 1K 5% 1/10W	
C17	1-163-038-00	CERAMIC CHIP 0.1uF	25V	R10	1-216-073-00	METAL CHIP 10K 5% 1/10W	
C18	1-164-222-11	CERAMIC CHIP 0.22uF	25V	R11	1-216-089-00	METAL CHIP 47K 5% 1/10W	
C19	1-164-346-11	CERAMIC CHIP 1uF	16V	R12	1-216-049-00	METAL CHIP 1K 5% 1/10W	
C20	1-163-121-00	CERAMIC CHIP 150PF	5% 50V	R13	1-216-115-00	METAL CHIP 560K 5% 1/10W	
C21	1-163-101-00	CERAMIC CHIP 22PF	5% 50V	R14	1-216-108-00	METAL CHIP 300K 5% 1/10W	
C22	1-163-121-00	CERAMIC CHIP 150PF	5% 50V			< SWITCH >	
C23	1-163-024-00	CERAMIC CHIP 0.018uF	10% 50V	SW1	1-572-473-11	SWITCH, TACTIL (POWER)	
C24	1-135-180-21	TANTALUM CHIP 3.3uF	20% 6.3V			< VARIABLE RESISTOR >	
C25	1-164-346-11	CERAMIC CHIP 1uF	16V	VOL1	1-238-906-11	RES, VAR, CARBON 10K (VOL)	
C26	1-164-346-11	CERAMIC CHIP 1uF	16V			*****	
C27	1-126-209-11	ELECT CHIP 100uF	20% 4V				
C28	1-164-346-11	CERAMIC CHIP 1uF	16V				
C29	1-164-337-11	CERAMIC CHIP 2.2uF	16V				
		< DIODE >					
D1	8-719-989-22	DIODE CL-150R-CD					
D2	8-719-946-33	DIODE HSM276S					
		< IC >					
IC1	8-759-605-59	IC CXA1280N					
IC2	8-759-044-56	IC BU2305F					
		< JAMPER >					
JW1	1-216-296-00	METAL CHIP 0 5% 1/8W					
		< COIL >					
L1	1-424-334-11	COIL					
L2	1-410-655-31	INDUCTOR CHIP 120uH					
L3	1-410-390-11	INDUCTOR CHIP 56uH					
L4	1-410-393-11	INDUCTOR CHIP 100uH					



